

## SUPPLEMENT.

# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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LONDON, SATURDAY, FEBRUARY 11, 1882.

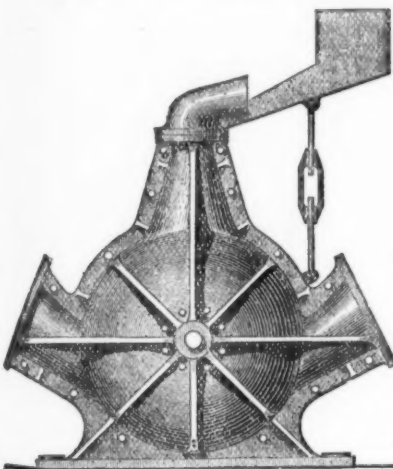
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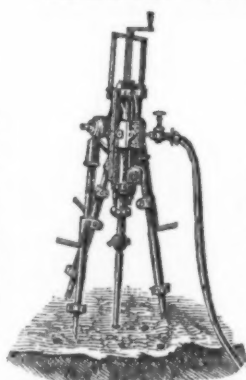
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Eclipse Rock Drill and Reliance Air Compressor	1 3/8 x 10 1/2	in 2 25
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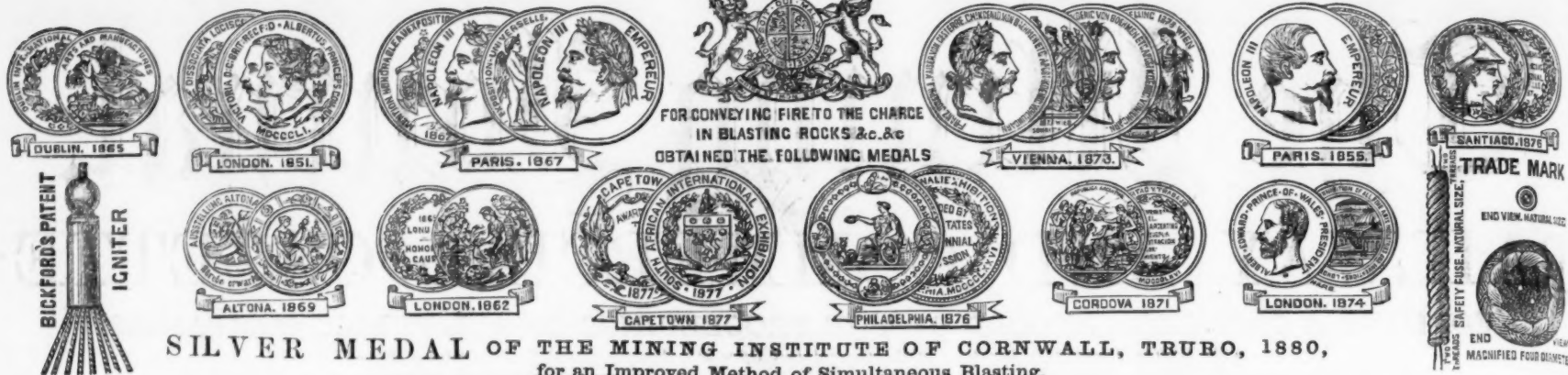
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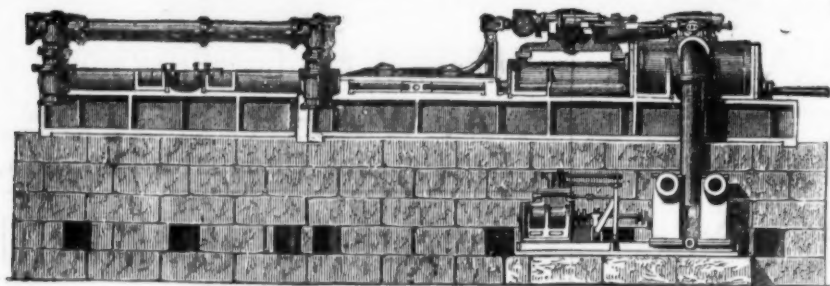
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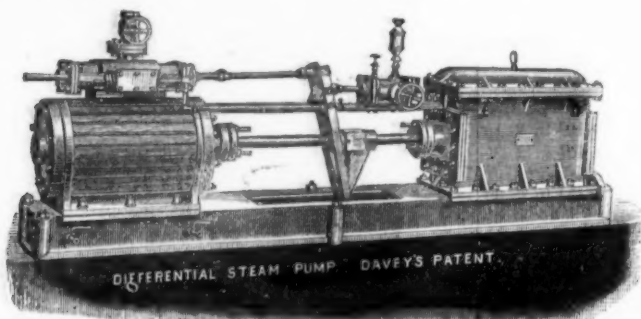
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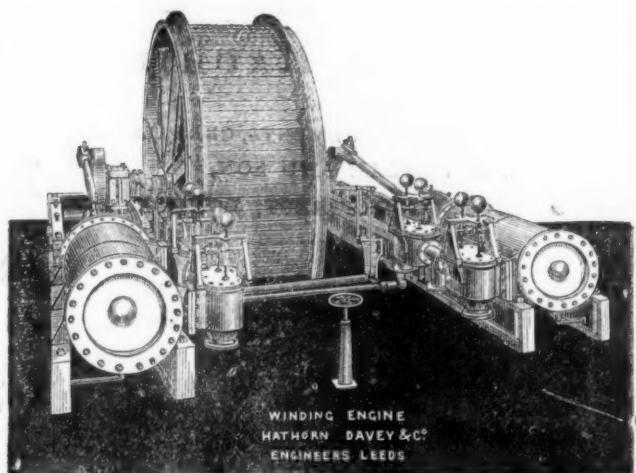
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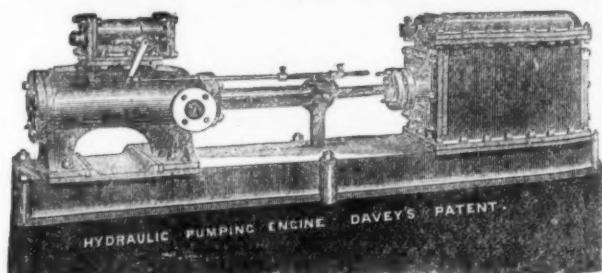
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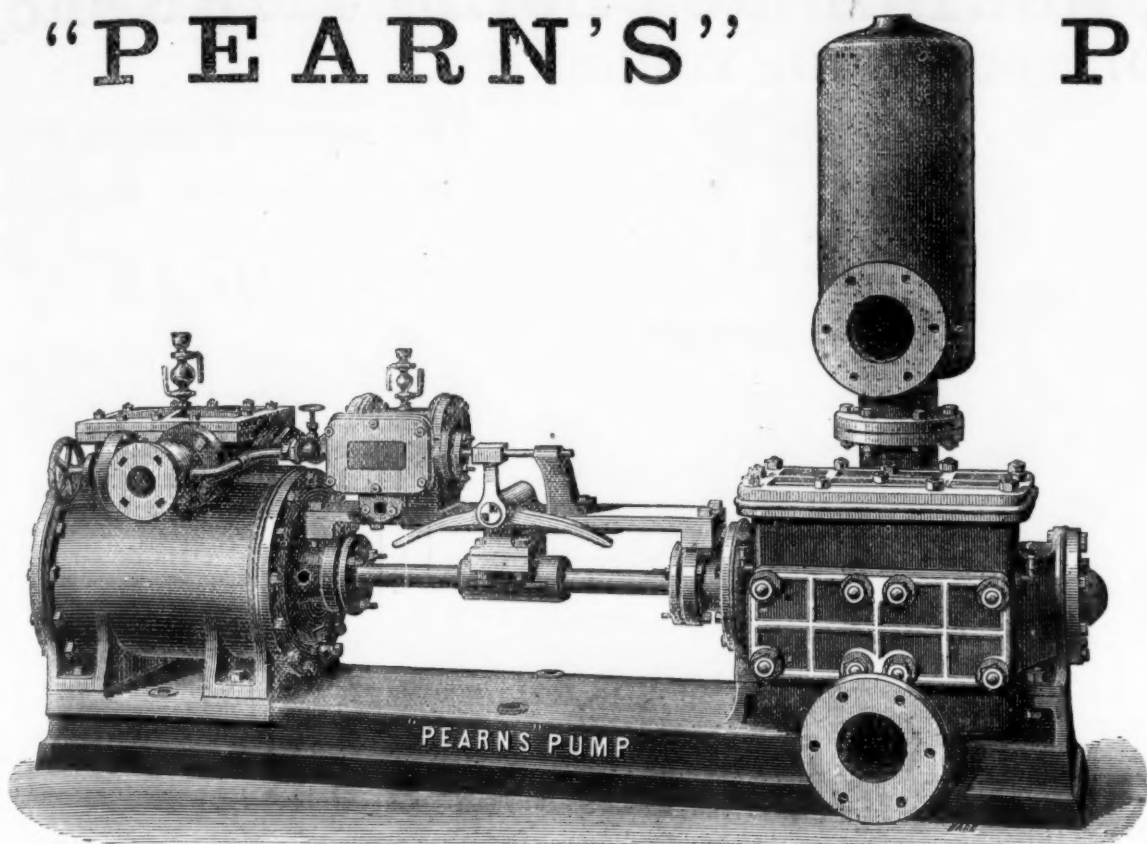
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Length of Stroke .....	9 in.	9 in.	9 in.	9 in.	12 in.	12 in.	12 in.	12 in.	12 in.	18 in.	24 in.	24 in.	24 in.	24 in.
Content, Gallons per Hour .....	£50	1500	2160	2940	3840	4860	6000	8340	11590	15360	19440	24000	34650	46360
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MINING INSTITUTE OF CORNWALL.

CAMBORNE, 8TH DECEMBER, 1881.

SIR,—Having been requested by the Council to superintend the Rock Drilling Machine Contest, held at Dolcoath Mine to-day in connection with the above Institute, I beg to hand you the following report:—  
The competing machines were the "Barrow," the "Cornish," and the "Eclipse"—each was fixed on the same mounting bar, and bored into the same stone. The result of the boring were as follows:—

Name of Machine.	Diameter of cylinder.	Diameter of Drill.	Time boring.	Depth bored.	Cubic inches of ground cut.	Cubic inches cut per minute.	Mean pressure per square inch.	Remarks.
Cornish.....	3½	2	1 15	4½	14.1	—	—	
".....	—	1½	55	9	21.6	—	—	
Total.....	3½	—	2 10	13½	35.7	16.4	61	
Eclipse.....	3½	2	40	—	—	—	—	} Ran into Cornish hole; hole not properly watered.
" second try.....	—	—	2 0	1	3.1	—	—	
" third try.....	3½	2	2 35	11½	35.3	13.6	60	
Barrow.....	4	1½	15	½	1.2	—	—	} Gland to mounting bar broke.
".....	—	—	2 0	8½	19.18	—	—	
Total.....	4	1½	2 15	8½	21.0	9.3	60	

To R. H. Williams, Esq., C.E., President of the Mining Institute of Cornwall.

I am, Sir, your obedient servant, **JAMES HOSKING, M.E.**

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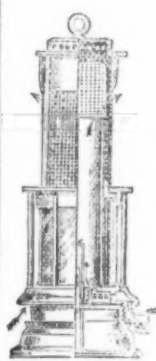
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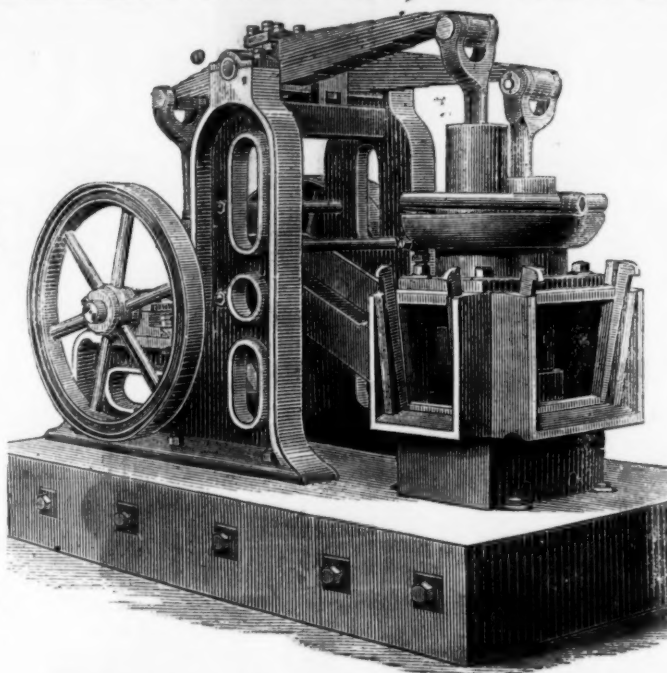
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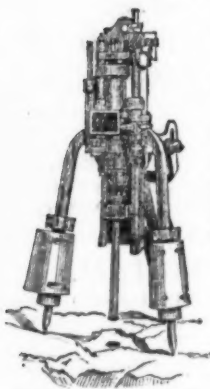
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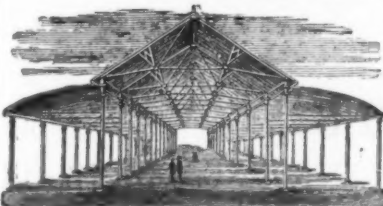
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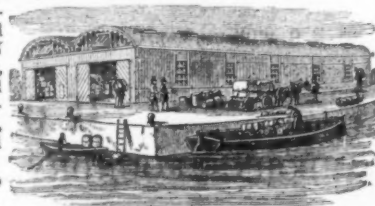
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## Original Correspondence.

## MINING IN SOUTH AUSTRALIA.

SIR.—Mining is making very decided progress, not only in gold, but in the recent rise in the price of copper has given a fresh start to this long-depressed industry. The public were a little startled by an announcement in the papers a day or two ago to the effect that a syndicate was being formed in London for the purchase of the Moonta Mines. Shares in the company have been steadily improving in value, and at the present price (3½) the value of the mine would be represented at over 400,000. But there is no doubt that a further rise will take place, for it is said that the financial position of the mine is such that there are sufficient funds in hand to pay a dividend, should it be thought expedient, of 1½. 10s. per share. Mr. Barr Smith (of Elder, Smith, and Co.) this week gave an order to purchase for him 1000 shares at 12½, or 12½. 2s. 6d. each. The mine was never looking better than now; the workings and machinery are all in the best possible order, and the prospects for the future yield of copper are most satisfactory.

The Corporation of Copper Mines of South Australia is about to push forward mining operations in the North. The Chairman, the Hon. John Carr, M.P., and Mr. Massey have just returned from a lengthened tour of inspection of the mines, and have decided on commencing work at the Leigh's Creek, the Mount Rose, the Yudanmutana, and the Nildott's Mines, besides those already worked—the Blinman, the Wheel Friendship, the Horn's Camp, and Garrett's Mines. The Nildott's Mine is rich in silver-lead, an assay of ore having given the following results:—Lead, 70 per cent.; silver, 114 ozs. to the ton of ore; and gold, 10 dwts. to the ton. Other silver-lead mines are about to be worked in various localities. There is one near Mount Barker, about 26 miles from Adelaide, whence 224 ozs. of silver to the ton has been obtained from samples of the ore. The old Glen Osmond Mines are also likely soon to be worked again, and other silver-lead mines in the South, near Normansville and Cape Jervis. I am informed that a sample of 14 tons of rich copper ore is on the way down to Port Augusta from the discovery I mentioned a few weeks ago, about 25 miles beyond Farina Town—the present terminus of the Northern Railway. Other copper discoveries are sure to come to light now there is a prospect of a revival in mining, as it is well known that several have been quietly nursed, in anticipation of an improvement in the market.

In gold mining the progress being made is very satisfactory. It is true advantage may have been taken of the excitement caused by some of the rich discoveries that have been made to bring forward a few rather speculative companies; but I do not believe there are 10 per cent. of all that have been started which have not some show of gold to warrant a trial of the ground. I am in possession of information respecting four or five discoveries of gold not yet made public, and which are likely to prove equal to the richest at present working. One of these discoveries is beyond Yudanmutana, or 450 miles in a direct line north of Adelaide; another is 60 miles south of the city, a third about 250 miles north, a fourth about 15 miles east, and a fifth 30 miles south-east of Adelaide. In all these localities there is an area of land around in which other discoveries may be made. Adelaide, Dec. 27. J. B. AUSTIN.

## GREAT SOUTHERN MYSORE GOLD MINING COMPANY.

SIR.—At the meeting of shareholders, held on Tuesday, Jan. 31, Mr. Bell Davies describes and condemns the work done by the late manager, and intimates that he proved himself to be neither a practical, competent, or economical miner. He, however, spoke in high terms of Dr. Atcherley's experience, skill, and mining ability, and remarked that "he (Dr. Atcherley) had set to work in the right way." After the decided opinion given by Capt. Bray as to the value of the property it is important to know whether Mr. Bell Davies's strictures applied to Capt. Bray; whether Mr. Bell Davies is a practical or a school miner; and, if not a practical miner, in what way is he competent to pronounce judgment upon practical men, or to distinguish a shoddy from a costean pit? According to Mr. Bell Davies the present able manager, Dr. Atcherley, "had put in a series of shafts at right angles to the course of the lodes." Will Capt. Bray or some of your readers explain this operation for the benefit of the theoretical miner? It is not known to the practical man.

AGRICOLA.

## THE GOLD AND DIAMOND FIELDS OF SOUTH AFRICA.

SIR.—It always affords me great pleasure to write of honestly earned dividends, and to do all in my power to promote the interests of bona fide mining. It is, therefore, with great pleasure that I place the Central Company of the Kimberley Mine in the foremost rank of all diamond mines. This company is taking out 30000. worth of diamonds per day; a large number of their claims are quite free from fallen reef, and their reserve stock of diamond soil at surface is increasing. The French Company at present stands second, but under proper management is about equal to the Central. This company is doing fairly well, and the dividends for 1882 referred to in my last will be fully realised. The next best company in Kimberley is the British, which will also pay well. The ground in the Barnato is as good as any, but four and a-half claims are rather too small for a good company. The Standard is too near the reef to be a great favourite; but this company, too, will pay the dividend for this year that I stated. Although there is room for improvement in the five above-named companies their mode of working contrasts very favourably with the rotten companies with which they are surrounded. Some of the big companies must soon publish their balance-sheets, which if strictly correct must show liabilities of near 100,000.; but I expect some will endeavour to put a favourable complexion on affairs by pretending that they have an enormous amount of blue (diamond soil) on the floors ready to wash. In fact, judging from certain indications, I feel sure such will be the case; but this ought not to deceive any person, and if parties have been guilty of putting reef claims into companies at a high figure that were not worth a cent, it will be gratifying to the public to know that they have fallen into the snare which they prepared for others. The south side of the Kimberley Mine is on fire, and millions of tons of stuff is on the move. The north side is much more secure than the south.

News from Jagersfontein is of a very unsatisfactory character, none of the companies being likely to pay for some time. At Kamfersdam they are deferring the washing from week to week in a manner that is not calculated to create confidence in the concern; they have done 20,000. worth of dead work, and they are certainly deserving of success. At De Beers Mine generally things are by no means satisfactory, two companies only being likely to pay dividends for 1882.

The chicanery practised at the late Mining Board elections is likely to be dealt with in the manner it deserves, as will be seen from the following paragraph which appeared in yesterday's Advertiser:—Yesterday was fixed for the first meeting of the Kimberley Mining Board; but at the hour fixed for the meeting the members who attended—including Messrs. Lee, Robinson, Cairncross, Joseph McKay, and Oelen—were served with certain notices by the sheriff. These turned out to be notices signed by the attorney of the French, Central, and Octahedron companies that those members who attended the meeting would be held personally responsible for their actions. Accompanying this was a notice of an intended application in the Supreme Court to have the election set aside. Upon this the members present left the board room, and retired to the secretary's room. In a few minutes the secretary announced that, as there was no quorum at the hour fixed for the meeting, none would be held. As the members left the board room they were each served with other formidable-looking documents.

I have always maintained that until the Mining Board is done away with, and a thoroughly competent commissioner appointed in its stead, the Kimberley Mine will not be worked to the best advantage, and capitalists will not have that confidence in the concern which its importance demands.

Judging from several samples that were shown to me yesterday there is a very fair prospect of finding coal near Boshoff. If a good seam of coal were found near Boshoff it would be of much more value than the richest diamond mine. Accounts from the River diggings are of a very unsatisfactory character; none of the River companies are likely to pay unless they be reorganised. In fact, most of the ground would have paid on its own merits; but at the time of the

company mania it was so heavily handicapped that ruin was inevitable from the commencement. At the River diggings, like many of our large diamond mines, there is a large quantity of ground that is well worth the attention of capitalists if taken up and worked on its own merits that is not worth the attention of capitalists if they have to pay anything but a nominal price for the ground. The Kimberley Waterworks are being pushed on with vigour and economy, and their energetic manager, Mr. Tom Lynch, is deserving of the highest praise.

Fighting in the Transvaal is of the most desperate character. Manokoran has been driven over the border into our territory, and is only a short distance from Barkley. During the past week our local share market has been a little more brisk, and notwithstanding the numerous failures in the colony business here is improving. The worthless companies are beginning to find their true position, and there are unmistakable signs of a more healthy state of affairs generally. Kimberley, Jan. 12. CORRESPONDENT.

## WYNAAD PERSEVERANCE ESTATES AND GOLD MINING COMPANY.

SIR.—Unbelievers in Indian gold mine shares have been so successful in depressing the price of these shares that I for one should be heartily glad to see them caught, and let us hope they may be so ere very long. This company is now known to be crushing, and it may cheer some readers of the *Mining Journal* who, like myself, have held on for a long time, to have the following extracts from Mr. Cooper the manager's letters, brought to their remembrance in this very interesting period in the company's affairs. On March 26 last he writes:—

"We are driving on the eastern reef, and have struck ancient workings which must be centuries old, as immense trees have grown over them. They have merely taken away the footwall casing, and left the reef, which is full of visible gold; in fact, the quartz is so rich I was afraid the natives would steal it, and have ordered a house to be built to put it in until we commence crushing."

In Mr. Cooper's telegram dated Nov. 21 he says:—

"Struck rich reef in main shaft 10 ft. through; free gold plentiful."

Now, Sir, in a letter that appeared in the *Financialist* of Aug. 22, the writer referring to the above extract from Mr. Cooper's letter says:—"In further confirmation of Mr. Cooper's statement I may add that I have seen a letter from one of the leading merchants of Southern India, in which he says that the quartz alluded to was so valuable that a coolie could make Rs. 10 a day (about 1½) by simply crushing it in his paddy powder. Our Indian friend, however, admits that the reef which they have cut on the Perseverance has been reported to be very auriferous, as well it may, for a pillar cut from one of the old galleries was sent home, assayed by Johnson and Matthey, and found to contain 7-75 ozs. gold and 2-60 ozs. silver per ton. Of course no one expects such a splendid result as that from bulk crushing, but still it is a very remarkable one all the same."

Under these circumstances, we shall all look forward with interest to the result of this company's crushings when ascertained. West Brighton, Feb. 9. WYNAAD PERSEVERANCE.

## INDIAN GOLD MINES.

SIR.—I cannot but think it is very much to be regretted that the delay in making known results of crushings, so much complained of, does not come to an end, and with it the prevailing doubts. As regards the Rhodes Reef, I understood at the last meeting that in about the first week of January the shareholders would have intelligence as to the produce from a considerable quantity of quartz; but it is now the second week of February, and no one is any wiser than he was twelve months ago. The time expended has been so much beyond the expectation, that the public do not now, it seems to me, feel that measure of confidence they once did, although it must be admitted that so far as reports and assays go they have lately been most encouraging and all that could be desired, short of actual results. It is surprising, indeed, that they have had so little effect upon the shares in an upward direction, considering their recent depression.

Like many others, my faith has been pretty much pinned to Mr. Brough Smyth's reputation and assurances. In January, 1881, he telegraphed and wrote the directors:—"Rhodes Reef looking splendid. Gold visible." "I have telegraphed this day that your prospects were never so bright as now." "At Rhodes Reef it is scarcely possible to break a piece of stone without seeing gold." "I have never seen better looking stone, and I am more than ever satisfied, from appearances, that the reef is a most valuable one." "The thickness of the reef where exposed and its apparent extension more than justify me in repeating the opinions I have already expressed as to its great value." "Gold visible." Believing in the man, these positive assurances can lead to but one conclusion—that the result must be favourable, and yet the shares are at 50 per cent. discount.

For my own part I consider this a fine opportunity for averaging one's holdings. For most of my shares I have paid a premium, but as a firm believer in ultimate success I have lately purchased at a discount, and believe that with a little more patience my reward will come. Let but the returns of Rhodes Reef prove favourable, and there will quickly be an end of the present chances. There is quite latent life enough in Indian gold mines for speculative activity to again become the order of the day, then those who have persistently held on and bought at present prices may reap a rich harvest. Feb. 9. HOPEFUL HOLDER.

## THE OOREGUM MINE.

SIR.—You were so good as to publish my letter in the *Mining Journal* of Nov. 19, wherein I asked my co-shareholders to take immediate action for an explanation of the defective management of this mine. I now find my co-shareholders will have this opportunity afforded them at the meeting to be held in February next. Last year's meeting was held on Feb. 23, and I conclude the coming meeting will be held about the same date. Living in India I deeply regret my inability to attend the meeting; but I hope many of my co-shareholders will rally to the front, and demand explanation, not only as to this defective management, but as to the exact position and prospects of the mine at the date of the meeting. This mine, designated in the prospectus as "the remarkably rich Ooregum Mine," is not as the Mysore Gold Mine, whose prospects now seem so questionable, for it has been described in the following words, to quote again from the prospectus:—"Differing from other Indian properties recently placed on this market mining operations have been carried on for some time by the Ooregum Gold Mining Company of Madras, and already about 500 to 600 tons of ore have been brought to the bank in course of sinking." Again, we have the encouraging representation—"In one shaft at the depth of 80 ft. Prof. Vazie Simons reports the ore to be extraordinarily rich, 40½ ozs. having been procured from 17 tons." And further we have been assured that—"It is traversed by at least five auriferous quartz reefs, and the lodes are all true fissure veins. These are uninterrupted by faults—a most favourable and exceptional circumstance, and one which gives unusual promise of certain continuous and remunerative results."

I could quote from this prospectus many other equally encouraging representations of this mine; but I wish to pass on to our Chairman's observations on its character and prospects made at the meeting on Feb. 23. They are of greater value and of more importance than the prospectus, since they were based on later information from and of the mine than the prospectus gave. I merely desire to recall to my co-shareholders the chief points. He says—"There were from 1500 to 2000 tons of auriferous quartz ready for treatment. Of this quantity 44 tons were put through the stamps erected by the old company. The stamps broke down before being at work a week; but the 44 tons had been crushed, and had yielded 40 per cent. of pure gold." Again, the Chairman remarks on Mr. Ratten's report of Jan., 1881—"There are six well-known reefs on the property. In one particular instance we have three reefs within an area of about 300 ft., and one shaft can drain the whole of these. Mr. Ratten further stated that 'the shoot of gold upon which they were working was beyond question a very rich one, and he was confident that with a better shaft and improved machinery a rich harvest would reward their undertaking.' Again, the Chairman remarks—"One of the shafts was worked five or six years ago, and gave a considerable return of gold, as much as 3 ozs. to the ton, and that was only a small prospecting reef."

It is thus shown that nothing is left to doubt in respect to the prospects of this mine in the representation made in the prospectus and

by the Chairman. Certainties have been assured to us; but, if report speaks truth, we are likely to find ourselves threatened with the same uncertainties as surround the Mysore Gold Company. Reports are now rife which, if true, would make all the mines in the Mysore or Colar district a deception. It is said that disputes have long existed and still exist between the workers in this mine as to there being productive reefs at all; whether the reef which produced 40 ozs. of gold has run short of the metal or has disappeared; whether the several shafts mentioned as existing have not been exhausted by the ancient miners, or their trace has not been entirely lost; whether the champion reef is not a myth—in fact, in a word, whether the representations given of this mine are not baseless. It behoves the directors to clear up this doubt by stating explicitly at the coming meeting whether the representations made in the prospectus and by the Chairman are still to be relied on, and specifying the time within which the shareholders are to realise them, and it equally behoves the shareholders to insist on a positive reply being given by the Chairman. I would also suggest to my co-shareholders the desirability of their requiring the directors to crush first the 1500 to 2000 tons of quartz on the ground. It should yield some 80000. if the representation made of it is correct, and on its truth will, I opine, rest the truth of all the other representations on which the mine was placed on the market.—Madras, Jan. 13. INDIAN SHAREHOLDER.

## THE OOREGUM GOLD MINING COMPANY.

SIR.—A report on this property has just been issued to the shareholders. Under the heading Reduction Works I extract as follows:—"The building can readily be finished before the mines are capable of keeping the stamps supplied with quartz." Now turn to Colonel Beresford's letter, dated Oct., 1880:—"We commence crushing in about 15 days. About 1200 to 1500 tons of stone are on the bank." In December, 1880, a telegram arrived, stating they had crushed 44 tons, giving 1½ oz. of gold per ton. Where have the 1500 tons gone to? To make the roads. The directors propose making the accounts up to May 31, 1882, and intend calling a meeting as soon after as possible. Now, would it not be better for the shareholders to politely request the directors to meet us at an earlier date, say in March, and let us know how we stand financially? I call this choice bit from the directors' report:—"Although the progress towards dividends during the past year has not been so great as was originally hoped there is no question but that progress has been made." I make no comment upon this paragraph, but will simply ask—

QUID RIDES?

## RICHMOND MINING COMPANY.

SIR.—Having been interested in this mine for many years I have perused with much attention the circular of the directors announcing the quarterly dividend of 10s., and I fully expected that some of your correspondents would have taken some notice of it in last week's *Journal*. The circular seems to have been issued chiefly with the intention of counteracting the recent unscrupulous proceedings of "bears," who appear to have taken advantage of a falling market; but I invariably find when such appeals are made that "bears" become more active, and the result is lower instead of higher prices—in consequence, I suppose, of the criticism which such an official statement invites—and I am, therefore, very doubtful if this circular will have the effect which the directors appear to desire. Indeed I have heard of a shrewd speculator, who after carefully reading the circular sold a considerable number of the shares, although he knew little about the mine, because he considered the present high price could not be maintained in face of such damaging statements! Time will show if he is right.

The present circular certainly gives good grounds for criticism; and in the first place I cannot quite see how the profits for November are made out to be about 10,000. The return for the four weeks in that month was \$175,000 from 3662 tons, an average of \$48 per ton, and the stated profit is, therefore, equal to 2½. 10s. per ton. Now in the report for the half year ended August last the average of Richmond ore was \$57, and the profits on 16,000 tons were stated to be between 50,000. and 60,000., or 3½. 10s. per ton at the outside. It will be seen therefore that although the November return shows a falling off of about 2½. per ton in the average of the ore, the profits are stated to be only 20s. per ton less. As no explanation of this result is given I am inclined to think some mistake must have been made in calculating the profits for November, especially as the proportion of smelting and other expenses would naturally be higher on the lower grade ore. Then what about the returns for December and January of which no notice is taken in the circular? The assay value of these is shown by the returns to be \$324,000, from 8194 tons, the average being \$39½, or (say) 3½. 10s., per ton lower than for six months ending August last, and about 2½. per ton lower than for November, a comparison of which figures prove I think that with the increased cost of working the lower grade ores there could not possibly be any profit, but more likely a considerable loss on the working for these two months, and seeing that for several weeks the average has been as low as \$36 and even \$31 per ton, and that according to the directors' circular Mr. Probert is afraid to promise better results from the old chambers (the present ore bodies), and that none of the recent indications have come up to expectations in leading to new ore bodies, I think it would require a very large amount of courage and a very vivid remembrance of how rare a thing it is for a mine of the character of the Richmond to fail permanently, as Mr. Probert suggests, to place the present value of the mine at 12½. 10s. per share, or over 650,000., not to speak of nearly a million pounds, at which the directors appear to value it!

It will also be seen that even were the profits to foot up 10,000. per month, which means that the average of the ore must be over \$50 per ton (not \$30 to \$40 as at present) and without allowing for the furnaces being shut down for repairs, &c., the profits for the year, after deduction of general charges, would not net more than 100,000., and as out of this again there are large bills for legal expenses in the still unsettled law suits with Eureka and Albion mines (not to speak of the large money claims involved), taking the most sanguine view of matters the dividend could not possibly exceed 1½. 10s. per annum, or one half of what has been recently paid, while if the ore continues at \$30 or \$40 (and even should fresh ore bodies be discovered soon, which is very probable with so many drifts and levels being explored in search of them, the grade is more likely to be low than high) dividends will very soon become a thing of the past!

Instead, therefore, of showing that the present value of the shares is too low, I think the statement of the directors goes to prove that it is very doubtful if the mine is at present even paying expenses (\$30 ore means a loss of 20000. to 30000. per week) that the value of the mine is entirely prospective, consisting of rich (!) ore bodies yet to be discovered, or to adopt the words of the circular—"as soon as the ore opens up the continued prosperity of the company will be assured." No doubt! This and the fact that Mr. Probert thinks the mine has not yet seen the bottom, that several of the levels are looking well for ore, and that there has been a (very important) discovery of low grade ore on the 200 rise, may to some minds be sufficient proof of the shares being worth 150 to 200 per cent. premium. They need not be surprised, however, if some (unscrupulous of course) parties should view these facts in another light, and act accordingly.

The San Francisco Bulletin gives an interesting statement regarding the present position of the mines on the Comstock, which is very suggestive, and shows that it is no uncommon thing for such mines as the Richmond to reach the bottom, as Mr. Probert puts it: 40,000 or 50,000 tons of ore per annum is a huge quantity to extract from such a mine as the Richmond for a series of years, and while I trust that it may be long before this mine becomes exhausted, it is not at all surprising that the good ores should now and then be somewhat scarce; and although the mine has done so well for the shareholders so far, we should not be above taking a lesson—or a warning I should perhaps say—from our neighbours; and as a case in point I would refer to the adjoining mine and great rival of the Richmond—the Eureka—which for a considerable time paid dividends of 12s. per share (50,000 shares), or 7½. 4s. per annum, and the shares of which can now be bought for about 2½. 10s.; or to the Californian mine, which has paid over 4,500,000. in dividends, present price of shares 1s. 6d.; or to the Consolidated Virginia, which has paid 3,200,000. in



dividends, present price of shares about 4s. 6d. "Sic transit Gloria Mundi."—Feb. 7.

P.S.—Since writing the above I see shares have had another sudden drop, in anticipation no doubt of the unfavourable run (\$40 ore), and of the announcement that one furnace is to be shut down. As this information, I understand, was not made public till to-day it looks as if some unscrupulous ones had access to it yesterday. The announcement now made is a fitting commentary upon the previous circular, and calls for no criticism from me. The moral is too obvious.—D.

#### MARBELLA IRON ORE COMPANY.

SIR,—Fully six months ago I recommended to your readers the Marbella Iron Ore Company as a mine that was certain to turn out well, and I am very glad to see from the report of last year's work, just published, that my expectations have turned out correct, for, as the directors state, it is the most satisfactory report they have ever published. They pay 5 per cent. dividend, and carry forward a large sum to credit of this year's account; and as the output for this year is nearly all contracted for at the best prices, there is no reason why they should not at least pay 12½ per cent. at the end of 1882. There is another mine I would notice whose shares are quoted much below their present value—the Canadian Copper and Sulphur Company. Their 4s. shares fully paid are selling at 26s. to 27s. The mine is looking very well, is carefully managed, and I have no doubt these shares will be at par before many months are over. ENGINEER.

#### CHERAMBADI MINE—NEW CALLAO.

SIR,—Seduced by a prospectus of the stereotyped character, I applied for and obtained an allotment of shares in this promising adventure, my faith in which (never very strong) has been a good deal shaken by the broad and confident statements issued by Messrs. Beall and Co. in two circulars addressed to the shareholders. The directors have endeavoured to diminish the effect of Messrs. Beall and Co.'s circulars, but they have not ventured to contradict the assertions that the Chairman is the holder of only 10 shares, on which he has paid only 10s. per share, and that the full sum paid up is only 43444. As every shareholder has no doubt received a copy of Messrs. Beall and Co.'s circulars, I hope there will be a full attendance at the meeting to be held on the 21st current, and that the true condition of affairs will be disclosed.

New Callao: In this mine also I am a shareholder, and I feel a little misgiving as to the safety of my money, seeing the prospectus gave assurance that an early application would be made for a quotation on the Stock Exchange, and that the directors expected it would not be necessary to call up more than one half of the capital. I have not seen a quotation of the shares, but I have received official intimation that the whole capital is to be called up. Perhaps some shareholders in the mines above named will kindly, through your columns, convey a crumb of comfort to  
FEB. 8. VERGENS.

#### LEAD REPORT.

SIR,—Since our last the market has been a falling one, and has been very flat, and one sale was effected at 147. 7s. 6d. for 100 tons of Spanish lead. The market now is firmer, but no further sales are reported; but the tendency is upward, and the lead manufacturers are quite full of orders, so that it only wants a little more demand to make an active and advancing market. STOCKS.  
Newcastle-on-Tyne, Feb. 9.

#### VALUE OF MINES, AND MINING COMPANIES.

SIR,—It is unfortunate for those interested in floating the Monte Catini Copper Mining Company [the company was withdrawn a few days after the issue of the prospectus, and all deposits returned in full] that they did not select some person with a less arrogant demeanour and better qualified than "A Careful Examiner" to become the apologist and exponent of their prospectus, and to show that my first letter was in error either in sentiment or principle, because he has failed to disprove my arguments, or the accuracy of my calculations of value. Instead of commencing his attack upon me in a fair, honourable, and gentlemanly spirit with a view of determining if possible that my basis of calculation was not well founded, he tries to ride the high horse, becomes dogmatic, dictatorial, personal, and for his own one-sided purpose enters into unfounded accusations as to my motives for raising the question as to the present value of the Monte Catini Mines, and all this because I merely exercised my right to criticise the prospectus of the proposed company referred to; but I am sure all persons outside the precise party interested in that affair will grant that I have dealt with the question in a fair, legitimate, truthful, and just manner, without in the least using offensive and reflective language upon any person or persons, or even mentioning their names. I pass over "A Careful Examiner's" personalities as to my engineering qualifications and practice. I am quite satisfied with my present status, which has not been gained by the abuse of the profession. . . . I am pleased to be able to state that I have never been possessed by ill-feelings toward any public companies, because every wise man must see that the particular interest of the profession, and also the general interest of the public, is really bound up in the success of bona fide undertakings. If, therefore, it can be proved beforehand that any such undertaking will pay a reliable dividend over a series of years in the future, such in point of fact as will justify the outlay of 125,000*l.*, or any other sum that may be necessary, then any amount of severe criticism upon it cannot detract from its merits, but when any such prospectus exhibits any internal evidence to the contrary that is the time when criticism may be feared by interested parties. . . . In referring to myself we have—"He first garbles the statements in such a way as to entirely falsify their meaning, then wanders about in a fog of figures which he evidently does not understand." But to whom is it evident I would ask? Here is a bald assertion which any person not pretending to be "A Careful Examiner" could make; but there is no proof of any fact coming out of these few easy words. As to the "fog of figures," they are left exactly where they were found, because my would-be antagonist did not dare to enter into them. It is a dangerous thing to write down figures representing a certain value unless they are absolutely correct, because someone would be found capable of handling them in a proper manner, and then the "fog" with which "A Careful Examiner" has surrounded them would soon be cleared away, and the fallacy shown.

There is, therefore, clear evidence that "A Careful Examiner" was not the man for this, otherwise he would have proved to a demonstration by other figures of what my "fog of figures" consisted, and whether they involved a principle or not. . . . "A Careful Examiner" should have taken his stand upon the merits of the question of value I have raised, and been prepared to discuss it in a proper manner, but he has chosen the vulgar course. Practical mining engineers of long standing do not require to be told by one who probably may not have any better qualification than that of an ordinary captain of mines, or mere office paper engineer, what preliminary practical elements in mining are required to be determined before bringing actuarial calculations to bear upon it before determining the value.

Everything connected with a mine must be subservient to the one grand point—that of making a certain defined income per annum. I, therefore, submit with all confidence that in all cases the expected income from any mine likely to be realised over a defined future period should be stated clearly in every prospectus sent forth asking the public to find the capital for the purpose of purchasing and working the mines, and I am also strongly of opinion that the parties interested in floating any company who do not care to show such items ought to be considered to be unworthy of public confidence. "A Careful Examiner" quotes from the prospectus—which he has examined under the misleading plea that he desires shares—that 6000 tons of copper ore are in "reserve" in the old mine, and says that 8*l.* per ton profit will be derived upon this quantity, and further that there is a profit to be derived on the "low class ore both in the mines and outside," but he fails to say how many tons of "low class ore" there are, and also the profit per ton upon it. . . . All his statements about productive new ground according to this or that

indication may be altogether illusory—a probability in fact, and nothing more, as every practical geologist knows, consequently the old mine may be the only thing that can be depended on; and as to this, I have dealt with it fully in my first letter.

Santander, Spain, Feb. 4.

MINING AND CIVIL ENGINEER.

#### EAST WHEEL ROSE, AND OLD SHEPHERDS.

SIR,—There seems to be little doubt but that the shareholders in the above companies are on the eve of a great success. The manifestations of acrimony which have met the directors in their efforts to bring the mines into active operations have for a time thrust the shares down. But the work done and the results which from week to week can be seen prove that a great success awaits the original patient shareholders. From the reports issued by the directors and agents it appears that everything is being done well, and that the lodes show a rich future even for the shallow workings. But individual testimony may be obtained, or a visit to the mine paid, to prove the great value of these properties. I have before me a private letter from a most experienced Cornish mining captain, and, speaking from personal knowledge—having examined the properties before they ceased working—he says "that the results will make the enemies of these properties look queer by-and-by." Speaking of the caunter lode he adds, "it will be found a splendid lode for many years to come, and is standing almost entire through the sett." He warned me months ago against parting with a single share, and so far his predictions have come to pass. He gives a word of warning to the shareholders. The enemies of these limited companies desire that they should fail—everything that can be done has been done to wreck the properties; but he earnestly hopes that the shareholders will stick to their shares, and thus to their property—for they have a great, rich, and lasting one in their possession, and they ought to value it. The constant receipt of circulars and letters marked "private," depreciating the value of the properties, especially by stockbrokers who represent Cost-book mines, has made me and my fellow-shareholders timid at times. But the advice of one who is a miner, and whose whole life has been spent in mining, managing, and reporting, who has worked for years in the mines, who lives in the neighbourhood, and is conversant with its progress, is worth hundreds of those who have never known its true value, nor have ever put a foot either inside or outside the mine. His hope is that we will stick to the property, for a short time only will prove that his testimony is true—and his advice is entirely disinterested. To my fellow-shareholders I would repeat that advice. Stick to your property, sell not a single share, and you will soon find that you will be richly rewarded. No mines have been more decreed. I trust that shortly it will be my lot to congratulate my fellow-shareholders on the greatly increased value of the property.—Feb. 4. ANOTHER ORIGINAL SHAREHOLDER.

#### UNITED SHEPHERDS WHEEL ROSE.

SIR,—Can any reader of the *Mining Journal* in the vicinity of Truro inform me whether the above mines are being opened up with the energy and economy necessary to make the company a success? If this is being done the shareholders will feel greatly encouraged by the recently published account of the adjoining property (Old Shepherds)—a description of the present state of the working, given by Captains Richard and James Nancarrow, Capt. Doidge, and Mr. Brown, of St. Austell, on Jan. 28 at the mines.

As the lodes in the eastern part of the United Shepherds are identical with those in the western part of Old Shepherds the following from Captain Richard Nancarrow is important:—"In giving his opinion on the new ground in the western part of the sett he would say that he did not know where to find another such piece of ground in a lead district. He believed he was not too sanguine in saying that it was the best piece of ground that he knew in the county." Brixton, Feb. 3. BELIEVER.

#### BWLCH UNITED MINES.

SIR,—In the weekly report of this mine which appeared in the *Journal* on Saturday last an important paragraph was omitted, and I fear the omission was the result of carelessness in copying by my clerk. Will you do me the favour to rectify the mistake in your next issue. The report should have read thus:—"The adit level was re-let to drive west, by six men, at 5*l.* 5s. per fathom, and to clear their own stuff; the lode is from 4 to 5 ft. wide, carrying a good mixture of lead ore, and a rich vein of solid silver-lead ore from 2 to 3 in. wide."—London, Feb. 7. W. BATTYE, Secretary.

#### MOUNT'S BAY CONSOLS.

SIR,—I am pleased to find that the Mount's Bay Consols, who floated their company in May, 1881, have forked the Trebarvah portion of the property, and are now in full course of work and making returns. Sydney Cove, which sett is highly spoken of in the neighbourhood, and from which good things are anticipated, was the scene of no little commotion on Feb. 1 on the putting to work of the 35½-in. horizontal engine for pumping, which moved off in good style and pumped the water well. The manager, Mr. Argall, addressed a few words to those assembled. He said, after some months of hard labour they were met together to start their engine; he trusted the working of the mines (as they must) would prove a benefit to the neighbourhood and a source of profit to the shareholders, who had come forward nobly to work the mines. He hopes the agents and men would do their duty to the shareholders so as to endeavour to command success, and after invoking a blessing on the concern, and that they may be guided so as to lead to the rich mineral veins, he christened it, saying—"Move Smedley's engine to unwater engine-shaft, and may rich lodes of ore be found to test the engine's draught."

A great deal of work has been done in this mine within the last few months, and great credit is due to the agents, engineers, and workmen. They are now about to erect another engine for drawing purposes and laying out their dressing-floors. At Pembro, the other portion of the property, the pumping-engine is expected to go to work in a few weeks. Here also are signs of great activity, and I trust the company will meet with the success they so richly deserve. Breage, Feb. 8. JOHN JAMES.

#### THE KILKENNY CATS.

SIR,—We are just passing through a great financial crisis. Banks have suspended payment, stockbrokers have been declared defaulters, several companies have come to grief, and how it all comes about no one seems to know, and where it will end seems equally mysterious; but I am pleased to say some highly intelligent and most trustworthy dealers, in mining shares especially, have solved the question. The cat is out of the bag at last, but I regret to say you are seriously implicated in this terrible state of affairs. You have in addition revived canalism in its worst form, you have exercised your undoubted privilege of inserting in the *Mining Journal* advertisements offering shares for sale at fixed prices. Why, Mr. Editor, you ought to be ashamed of yourself. What is the world coming to if you are going to let people advertise in the *Journal* what they will take for sundry shares they may have for sale? Now, I can tell you in confidence it will not do, you must put a stop to it. There is a grand combination formed to end it, nearly as large as the fourth party in the House of Commons, and they have solemnly decided to eat these obnoxious advertisers up with their own weapons, bones and all. For the future they will advertise prices themselves, and continue to do so on so low a scale as to completely and "catawomaciously" chew up" their erring brethren. It is not to be done by halves either; you may expect to get even halfpence and farthings into your advertisement columns, so completely is it intended to cook the game, nor need you be surprised either if a few shaky shares are thrown in with the lots as an inducement to purchase as well as to wean off investors from these fixed-prices fellows. And in the meantime this praiseworthy and patriotic combination in pursuance of justice and right will not fail to demonstrate to country holders of shares how little their investments are worth, judging by their own prices as advertised, which will enable distant shareholders to balance their books more correctly by being able to write off the correct amount of depreciation in stock on their profit and loss accounts, while to few it may also

prove advantageous if they succeed in forcing delivery of shares at prices no one else would sell at. I say if they do, but be that as it may these highly influential and mighty magnates will make the more enlightened education of share dealers who advertise at fixed prices their task, which in the interests of a confiding public they will pursue to the bitter end, even should such worthy immortalise their names on the records of justice in Lincoln's Inn Fields. Can anything be done to avert this calamity? It will be a melancholy thing to see these dealers eat each other up, although one or two might benefit by expansion. I could not bring myself to do it, I have a delicate appetite, and am rather an epicure. Royal Exchange, Feb. 8. BOMBASTES FURIOSO.

#### THE LIABILITY OF SHAREHOLDERS.

WHEEL COATES UNITED TIN MINES (LIMITED), IN LIQUIDATION.

SIR,—Our attention having been called to a paragraph in last week's *Journal*, page 127, under the above heading, which states that—"Now, in the case of Wheel Coates the original constitution was Limited Liability, but in December last some of the shareholders thought proper to convert it into a Cost-book concern, and Mr. Willis was one of those who did not care to exchange a known liability for an unknown one; he, therefore, gave notice, in accordance with the Act of Parliament, that he required to be bought out."

We beg leave to contradict the above statement, and to say most emphatically that there has been no such conversion of the Wheel Coates Company from the Limited Liability System to the Cost-book System.

A meeting of shareholders, duly convened by circular, was held on Dec. 7, to consider the advisability of winding up the Limited company in consequence of its liabilities; and the resolution to wind up was unanimously passed by those present in person and by proxy, and every shareholder was informed of that fact; and with the exception of your correspondent, Mr. Willis, no shareholder dissented from such winding up. The mine was advertised in the *Mining Journal*, as well as in other papers, to be sold by public tender, and in due course it was sold and the purchase money received by us. The broker from whom Mr. Willis bought the shares knew perfectly well that the winding up of the company was in contemplation, he having been informed of that fact. We beg leave further to add that the Cost-book company has no more to do with the Limited company now in liquidation than it has to do with Devon Great Consols.

W. BATTYE, EDWARD TOMBS,

Liquidators.

#### TIN MINING IN THE ST. BLAZEY DISTRICT.

SIR,—There is great excitement now in this neighbourhood (which has been so long dormant in mining) owing to a new and important discovery in the New Fowey Consols Tin Mine, which I referred to in the *Journal* of Dec. 17. Although the present company has had it in their possession for so short a time tin has been found in abundance. Stopping was commenced at the back of the adit in good tin ground, and at the same time clearing the old shaft below adit. The water is now out to the 10, where a fine tin lode is now standing, and the lode at this depth valued to be worth over 40*l.* per fathom. This I should say plainly shows that the former workers' attention was not called to tin, as there is so much now standing in sight. It is not yet fully ascertained what old workings there are at this level. This is the only tin mine of importance that has yet worked east of Wheel Eliza, which is nearly three miles distant, and all in the same run of mineral ground.—St. Blaze, Feb. 8. A WELL WISHER.

#### WHEEL KITTY (ST. AGNES).

SIR,—Having noticed the letter of a "Constant Reader" in the *Journal* of Jan. 7, where particular allusion is made to this mine, and where it was stated they had a good lode in the cross-cut at the 118 ft. level, the writer promising to give further information respecting the mine in the following week's impression, I have been anxiously looking forward weekly for the desired particulars, but have not yet seen a resumé of this subject. As shareholders get but little or no official information from the mine as formerly, when reports were regularly forwarded to the *Journal* for our perusal, we have to wait the result of each general meeting. It would give the distant shareholders satisfaction and an insight into their property if fortnightly reports were sent for insertion in the *Mining Journal*. AN OLD SHAREHOLDER.

#### THE CALLINGTON DISTRICT.

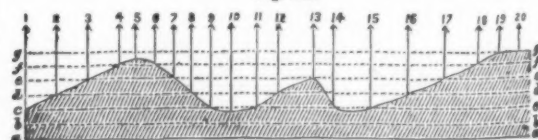
SIR,—I have observed the remarks made by correspondents in last week's *Journal* relative to Kit Hill Great Consols and the drive of its tunnel south across the lodes from the northern slope of the hill, under the guidance of Mr. Peter Watson, the chairman, and, I believe, managing director of that company; and I can quite endorse the opinions expressed by all practical parties as to the ultimate good and profitable results soon to be obtained under such an able pioneer. The great tunnel of the Silver Hill Mining Company being so rapidly driven by boring machinery north from the southern side of the hill is passing through lodes of great strength and importance to the whole district. As proof of their bearings and continuity of productiveness the last cut through in the tunnel No. 4, within a short distance of the Lady Ashburton boundary, produces rich copper and silver, probably worth from 15*l.* to 20*l.* per ton, underlaying north about 3 ft. in 6, and within a short distance of the Wheel Brothers silver lode, which underlays south about 2 ft. in 6, consequently they will unite and form a junction, I should say about 10 fms. below the great tunnel level, where a mass of minerals are almost certain to be found both above and below the junction. The great tunnel being so close to Lady Ashburton (which sett is on higher ground) will unwater the lodes traversing their property below the junctions referred to, the advantages of which will without doubt soon be experienced by a more vigorous development. Plymouth, Feb. 9. S. B.

#### SOME REMARKS ON THE PROFITABLE EXTRACTION OF GOLD FROM SUPERFICIAL DEPOSITS IN WILD TROPICAL COUNTRIES—No. VII.

BY GUSTAV JULIUS GUNTHER.

The very intimate connection which ought to exist between the location of the reduction plant and the mode of construction, or the nature of the latter on the one side, and the situation, quality (richness, degree of crushability, &c.), and quantity of the deposit which is to be operated upon has already been hinted at in former communications. For the sake of clearness and simplicity I shall keep in view the example already treated upon—a well-defined gold-bearing channel or course of rock. The diagram Fig. III. in No. IV. might be made to serve all our purposes of explanation:—

Fig. III.



N.B.—Letters indicate altitudes, figures the positions of exploration pits.

Knowing now as nearly to exactness as it is practically possible how much in quantity, and of what percentage yield, the object of our operation throughout its whole length and breadth is, thanks to the strictly systematical manner which we have made it our rule to pursue, we could easily add together all what we may have to hope for in the shape of profit. I feel it exceedingly difficult to give any precise rule in this respect; but here, too, the old mining rule—keep always reserves, and keep those reserves in such a way that they could always easily and cheaply be accessible in case of need—holds good. In our case now the lowest ground would be situated in the direction to the left deeper than trial pit No. 1. I should then deem it advisable to leave all the auriferous ground lying



between trial pits 1 and 9 untouched, and cut through it an adit for two tip wagon ways at the level line, *c*, or even *b*, and through this adit or tunnel we should carry all the stuff that is worth conveying, and which is contained in the masses standing between trial pits, 9, and 10 and 20. The lower down the payable ground is tapped the easier would be its taking away. The surface would be wrought away by means of terraces or surface stopes, and some of the trial pits be used for placing shoots therein. As long as the distance does not become too long we should go on in this way, carrying away all the good stuff that is obtainable in the direction of trial pit 20, and farther, if advisable, through the transport adit, *c* or *b*. Working in this way the distances for the carriage of our ores would grow less and less, and the costs would be proportionately less as time goes on, the last ground to be worked being the reserves, which we have left standing unbroken in the close vicinity to the chief establishment, and with the disappearance of the reserves the deposit would be exhausted (being a superficial one), having, however, paid increasing dividends up to the hour of its expiration.

To return again to the theme as to where the reduction plant should be placed here the maxim must, as already stated, rule that the nearest to the mine the better. Should there be water-power of a very seductive nature further off, be the distance ever so little, we ought first to try whether we could bring it to the spot by means of a well-constructed leat—for in it the water comes by itself, gratis as it were, to our aid; whereas in the opposite case the conveyance of the mineral involves continuous labour and expenses. In my next I hope to be able to treat on quartz reef, country, and placer deposits, and some peculiar exploration structures to be employed in connection therewith.

#### THE KÖPE SYSTEM OF COLLIERY WINDING.

At the Manchester Geological Society meeting on Tuesday, a paper "On the Köpe System of Colliery Winding" was read by Mr. C. M. Percy, of Wigan. Mr. George Gilroy, the President of the Society, occupied the chair, and there was a large attendance of mining engineers.

Mr. C. M. PERCY, in the course of his paper, said there was no doubt that the most important mechanical appliance at a colliery was the winding-engine, which should be powerful, quick in action, and easy of control. As to economy, the argument has been often used that there is no real waste with colliery engines, because however much fuel they use it represents no value, and would have to be thrown away if not used. Such an argument is sheer nonsense, because in any case the fuel that generates steam for a colliery engine could be sold to generate steam at a mill or a foundry. And fuel has now to be raised from such a depth that even the slack should represent a commodity of some value. After referring to the methods of winding practised in the North of England, Nottingham, and Lancashire, he remarked that Mr. Clark, of the Garswood Company, had written him that "our tail or balance rope works admirably well. We have not had the slightest hitch since it was put on." But, he continued, all these drum appliances only partially meet the difficulty. The Köpe system goes into the matter thoroughly, and dispenses with drums altogether. The principle of the Köpe system is that no drums are needed, and instead a pulley is placed on the crank shaft. The main winding rope, for there are several, has a cage at each end, and merely passes half round this drum pulley. Under the cage there is the ordinary balance rope just described, and there are two additional or safety ropes about half the strength of the main winding rope. These safety ropes pass over two pulleys placed in the headgear, and take hold of both cages. These safety ropes have nothing to do but move about so long as the main winding rope keeps right, and there is less danger of anything happening to the winding rope in the Köpe system than with ordinary winding appliances. But nervous spirits seeing that only one main winding rope is used, and that in the event of this giving way the whole affair would go down the pit, it was thought an improvement to attach these two light safety ropes. If the main rope breaks, these safety ropes come into operation, and both cages remain suspended safely. Sometimes there are no conductors, the idea being that the movement in winding is so steady that none are needed.

The advantages claimed for the Köpe system are:—1st. Drums are dispensed with and a simple pulley substituted. The expense of drums is saved, and the weight, which is something enormous in large winding engines, avoided. The engines are brought closer together, thus lessening the length and diameter of crank shaft, and the winding-engine house does not need to be nearly so wide. 2nd. The load upon the engines is reduced to a minimum, and made absolutely good throughout the winding. By this means a smaller pair of engines will accomplish the work. 3rd. The pulley upon the crank shaft can be made exactly equal in diameter to the head gear pulleys, and the main winding rope is thus always coiling upon the same side. 4th. The main winding rope is always working in the same line, and there is no side movement with its injurious influence. 5th. Only one main winding rope is needed, the balance rope being one which has done its work as a winding rope, and the safety ropes being light, and having next to nothing to do. 6th. The whole of the winding ropes is always easily got at for inspection, and no parts of one wearing themselves away by injurious grinding influence upon other parts. Unfortunately for himself, for the paper, and for the audience, the writer has never seen the Köpe system at work, although he hopes to do so shortly, but believes that in its leading principles it is correct. It seems unwise not to have conductors in all cases, and, perhaps, the main winding-rope instead of only passing half round the drum pulley should be made to pass at least once round. But in its abolition of massive winding drums it is clearly a step in the right direction, and it does seem to give a less load and a more uniform load upon the engines than any other arrangement. When first introduced the inspectors of mines objected to it for raising and lowering men, but after personal inspection this objection was withdrawn. With regard to its operation in England, there had been some difficulties. If a quick start was made the rope slipped upon the drum, and this was especially the case after greasing the rope; capping a rope was a serious undertaking, and changing a rope occupied a considerably longer time than with the old arrangement. Winding ropes, however, said Mr. Percy, should neither need changing nor applying very frequently.

The usual vote of thanks having been passed to Mr. Percy for his paper a discussion took place, in which some of the advantages claimed for the Köpe system of winding were criticised rather adversely.

Mr. JOSEPH DICKINSON, Her Majesty's Chief Inspector of Mines, said that he was using no mere empty phrase when he stated that so far as any new arrangements connected with the working of collieries were concerned he had found Lancashire always moving in the front rank. It would, however, seem that Northampton had stolen a march upon them on this occasion in the introduction of something new. Whether it was from the general winding arrangements of Lancashire being always in a very complete state, or whether it had arisen from a doubt as to the advantage to be derived from the adoption of a counterpoise to the rope in the shaft, it was nevertheless the fact that in Lancashire we had very few engines balanced. We had various descriptions of drums, but there were scarcely any engines in that part of Lancashire where they had the ordinary balance as used in the North of England. At the Pendleton Collieries a few years ago there was one, but it had been removed. In the North of England these balances were used to a considerable extent, but in Lancashire there was no attempt to counterbalance the engine. It seemed that at the Bestwood Collieries there was not only a counter-balance, but there was a new system of winding without the ordinary winding drum. So far as their discussion went he thought they might look upon these as two separate systems not necessarily connected with each other, and what he wished to deal with specially was not the new system of winding, but rather the advantage or otherwise of having a rope in the shaft balanced. For the last half-century it had been the common system of winding in South Wales. There were a number of collieries where they had balance-chains underneath and attached to the bottom of the cages. The rope was a new idea, and he thought had many objections which did not apply to the old-fashioned balance-chain. He thought great results might be expected from balancing the engines in this manner. In some remarks which had been made in different newspapers in connection with these balance-chains, it had been set forth that they could put in any old chain for the purpose. From long experience, however, he found that these balance-chains were just as liable to break as the rope which carried the load, and they should, therefore, be constructed of equally good material.

Mr. AITKEN asked whether, in the event of a balance-chain breaking with the cage near the top of the shaft, the result would not be a losing of the control of the engine, and an inevitable accident.

Mr. DICKINSON: If such an accident as this takes place there is a general break down.

Mr. AITKEN: Then the balance chain introduces one more element of danger.

Mr. DICKINSON: Exactly so, and that is perhaps the reason why we have so few balance chains in this part of the country.

Mr. J. S. MARTIN, Inspector of Mines, said he believed there were collieries in the neighbourhood where they had condensing winding-engines, and he understood they were working satisfactorily.

Mr. PERCY, in replying upon the discussion, said he had not come forward as a special advocate of the Köpe system, nor was he responsible for any of its defects, as neither did he claim credit for any of its advantages. If the pit were a very deep one, he admitted

that the balance rope should be a good one, but for depths of 300 or 400 yards he considered that an old winding rope was quite sufficient for the purpose. With regard to the adoption of the pulley in the sump, he did not think any balance rope would work well without such an arrangement, and that any balance rope would work well with such a pulley. The additional safety ropes in connection with the system he did not think either necessary or an improvement, and that the system would be better without them, as there was a risk of men becoming entangled with the main rope.

The CHAIRMAN suggested that the discussion might be taken up again at a future meeting. The system was not a new one to his experience. About 40 years ago he remembered such a system of winding being adopted from a shallow mine, and it answered very well, but when it was afterwards applied to a deep mine it completely failed. Whether there had been any improvement since he did not know.

Mr. DICKINSON referred to a system of working cages without having any resting catches, which was universally adopted at the Hargreaves Collieries, Burnley.

The CHAIRMAN said he had worked collieries 400 yards deep for many years without catches.

Mr. DICKINSON: They hold in Burnley that it is only the lazy engineman that requires catches.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Feb. 9.—At this time of the year we generally have to record advances in the price of coal, but this winter would seem to be slipping away without any rises being declared. Crucial prices of manufacturing fuel in South Staffordshire have remained without alteration for the past four months, and the rates then announced by the Earl of Dudley still prevail. Thus furnace (thick) coal is 9s. and 8s. 6d. per ton; forge and steam coal 8s. and 7s.; bright and steam screenings 7s. and 6s. 6d.; and engine slack 4s. 6d., 4s., and 3s. 6d., according to size. Heathen coal is—forge, 9s.; and slack, 4s. 6d. New Mine coal is—forge qualities, 8s. 6d.; slack, 4s. 6d. The demand for manufacturing fuel is rather better than two or three months ago, but the improvement is not sufficient to carry any rise in prices, not even when coupled with the slight advance in wages which the colliers have lately received under the altered sliding scale arrangement. The demand for pig-iron on 'Change this week was excellent. Makers of all mine sorts reported that all their output was being consumed, and that they were contemplating putting in more furnaces. From 37. 7s. 6d. to 37. 10s. was demanded for Staffordshire all mine pigs; 21. 17s. 6d. to 37. for part mine; and 21. 7s. 6d. to 21. 10s. for common iron. Cinder pigs were 45s. Hematites sold fairly well at 75s. per ton. Finished iron was strong in price, and the makers reported that the mills and forges continued very active. Bars 87. 10s. to 67. 17s. 6d., according to quality.

The ironworkers in South Staffordshire have been rendered dissatisfied with their present wages by the 7½ per cent. advance which has been conceded to the North of England ironworkers. The men in this district now demand an immediate advance of 9d. per ton to puddlers, and 7½ per cent. to millmen. They threaten a strike if their demands are refused. A joint effort is being made by the officials of the Operative and Employers' sections of the Wages Board to bring about an amicable settlement without jeopardising the existence of the board.

The North Staffordshire ironworkers are also dissatisfied with the existing remuneration. They have decided to appeal to their employers to return to the scale of prices paid before the late depression in trade set in, especially as respects doubling, concerning which the puddlers of the district made great concessions some time ago.

The application of the North Staffordshire colliers for an advance in wages was brought under the consideration of the board of the Federation of Miners for the Midland Counties at a meeting in Wolverhampton on Tuesday. The board comprises representatives from North and South Staffordshire, East Worcestershire, Salop, and Cannock Chase. After a lengthy discussion it was resolved to countenance the application.

At the same time a deputation was appointed to represent the miners of the Midland Counties at a conference of employers and employed shortly to be held in London at the instance of the Mining Association of Great Britain for the consideration of an increase in the wages of colliers throughout the district.

The Sandwell Park Colliery Company directors, at their meeting on Monday, decided to pay an interim dividend for the half-year at the rate of 5 per cent. per annum.

#### REPORT FROM CORNWALL.

Feb. 9.—After the rapid "ups and downs" that we have had in the tin market during the last fortnight it is satisfactory to be able to see a definite prospect of more settled times. We may fairly anticipate now, we think, not only a full recovery of the recent drops, but a substantial additional advance, and this at no distant period. Certainly there are wanting no elements of assurance in this direction, and we may hope, too, for the time that the merely speculative element in these transactions has done its best and worst. Cornwall has little to complain of the due course of steady legitimate business.

As usual Dolcoath account is one to be made a note of. This king of English mines is now making profits at the rate of very nearly 45,000*l.* a year, and paying its lord in addition for the "exhaustion of the corpus" something like 8000*l.* Nor is there any apparent reason why this highly gratifying condition of affairs should not continue. As Capt. Josiah Thomas humorously remarked in reply to an enquiring shareholder who feared exhaustion, there are 3800 miles to sink before the limit of the sett is reached centrally; and that this not all a joke is shown by the fact that the lode in the bottom of the engine-shaft is worth 350*l.* a fathom, though the report modestly puts it at 250*l.* That is to say, in the very deepest part of the mine, the lowest point in depth ever reached by any metalliferous mine in the kingdom, there is the largest amount of mineral riches. This is a fact upon which we have frequently commented, and it has long ceased to have the character of a casual phenomenon, and has become a permanent characteristic. Only now it is far more pronounced than ever. Our belief is that this increase of productiveness in depth is by no means confined to Dolcoath Mine or Camborne district, and that in centuries to come other Cornish mines will be profitably following where Dolcoath has so well pioneered the way. Capt. Thomas has full ground for his belief, judging from the best of all evidence afforded by his own "bal," that "there seems to be no end to the production of tin in Cornwall." After an existence that must be measured not by scores but by hundreds of years, Dolcoath is now looking better than at any former period of its history. But all its wealth would have availed nothing without perseverance and good management; for, without pluck, honesty, and sound judgment no mine can by any means be permanently successful.

We are glad to find that the telephone has been so successfully introduced at Dolcoath. When this marvellous invention was first exhibited in the county by Mr. R. N. Worth at the Polytechnic meeting, immediately succeeding the Plymouth meeting of the British Association (Prof. Bell lending his own instruments for the purpose), it was at once suggested that it might well be applied for mining purposes. Dr. Foster then made experiments in mine shafts, and thoroughly proved its adaptability. Nevertheless it has taken until now to get the telephone into practical operation in this direction. Cornwall does not move very quickly in such matters. However, now that Dolcoath has led the way we should not be at all surprised to find the example largely imitated.

It is to be regretted that no definite action was taken by the Dolcoath shareholders with regard to the application from the Camborne Science and Art School for and to its new buildings. As we pointed out last week the mining industry of Cornwall is directly interested in the better technical education of miners. Mr. Lanyon's opposition, though undoubtedly well intended, seems to us rather misplaced. As an individual he is always to the fore himself, but there are many who are not quite so ready to aid movements of this kind, and it would be no hardship if they were made to do collectively and indirectly what they will certainly not do of their own

motion. We hope that even yet something may be done in this matter.

We may take it as a proof of the improved condition and substantial character of local mining operations generally during the past year that the Cornish Bank should have been able to present such a satisfactory report to its shareholders. Banking cannot flourish where business is not active and profitable, for although for a time there may be exceptional profits on the employment of large banking capitals when the general money market is tight, that condition of affairs is always liable to a reaction which does not attend the regular course of trade.

We fail to see what the county is to gain by the increase of tin-smelting companies. If they introduced competition they might be of some use, but as all experience has proved they do not, Cornwall can very well do with those it already has. Undoubtedly change is needed, but not in this direction.

Another of the many attempts that have been made to utilise and bring into the market as of commercial value the enormous deposits of peat of Dartmoor—to be counted by many millions of tons—has failed. It has been resolved, and not over amicably, that the West of England Compressed Peat Company shall be wound up. The history of attempts to utilise the Dartmoor peat and its products extends over something like 40 years, from the time when the old French war prison—now the convict prison—at Princetown was turned into a peat naphtha distillery, until the present day. Originally the difficulties were mainly operative, but of late years they have rather been financial, and probably the time will come when some wisely managed company will get successfully to work.

#### TRADE OF THE TYNE AND WEAR.

Feb. 8.—The coal trade continues fairly active on these river. Upwards of 90,000 tons of coal and coke were shipped at Tyne Dock during the past week, and most of the steam collieries on the north side of the Tyne are expected to be fairly employed during the present week. Orders for the French ports are above an average at present, and this is no doubt partly due to increased attention at the Northumberland collieries in producing coal of large size, which enables them to compete successfully with Scotch and Welch coal. The demand for manufacturing coal, and for bunkers for steam, and for Durham coke, continues unabated, and increased prices are expected as the year advances. As few new winnings for coal have been made in this district during the past few years, owing to the depression in the trade, it is reasonable to suppose that the output from the present pits has about reached its maximum, more remunerative prices may certainly be expected than have prevailed of late. The important new winning we have so often alluded to recently made at Whitburn may now be considered almost complete, so far as the sinking is concerned. It will be recollected that the sinking has been completed by the Chaudron process, the first instance of the kind in the North of England, and the formidable feeders of water met with in sinking through the limestone have thus been disposed of and securely tubbed back. Coal is now worked here from one of the seams. Upwards of 100 tons per day are got, and this quantity is expected to be increased to 500 tons per day in a short period. A new winning for coal has also been made lately in West Durham, near Shotley Bridge, by Mr. Dickenson, the coal having been leased from the Marquis of Bute. The shaft has been sunk so far as to prove five seams of coal, and this is likely to prove an important winning.

In connection with the Durham miners and the sliding scale a conference was held on Saturday in Newcastle at the coal trade office between the Durham Coalowners' Committee and the Miners' Federation Board, to discuss the proposed sliding scale agreement. Some progress was made towards an arrangement on this question, but the discussion was further postponed.

On Thursday last a deputation, consisting of representatives of the Miners National Union and Mining Associations throughout the United Kingdom, had an interview with the Home Secretary in order to put before him the necessity of a new Mine Bill, and urging that the miners should be empowered to appoint and maintain their own check-weighmen, and that the mines should be more efficiently inspected. Mr. Burt, M.P., introduced the deputation, who stated their views at length. They contended that the workmen should not be allowed to enter a mine until it had been examined and reported upon as free from accumulations of gas, and that such examination shall take place not more than two hours before the workmen enter the working place, that in opening up new mines or fields of coal there ought to be drifts made in advance of the general workings so as to draw off and drain the gases that are of a dangerous or explosive character, that the number of inspectors should be increased so as to enable the inspectors to make more frequent and thorough inspections than at present, and that any competent workman should be eligible for the office of mines inspector, that considering the magnitude of mining operations a Minister of Mines should be appointed, and that the power of prosecuting be granted to a common informer instead of being confined to the Secretary of State. Sir W. Harcourt made a general reply, which contains nothing at all definite. He said that a great many of the questions that had been brought before him could be dealt with without legislation. He promised to consider the subjects fully, and consult with the mine inspectors, who would shortly hold their annual meeting as to their views, and if he could give effect to them he would do so. The subjects brought forward by this deputation are some of them of great importance and worthy of serious consideration. The drainage of the gases in coal fields by means of advanced drifts is no doubt very important, but any particular mode of laying out or working fields of coal is not likely to be deferred by an Act of Parliament, and at present the mine inspectors have no power to enforce any particular mode of working. The powers of these inspectors, indeed, may be fitly defined as infinitesimal, and even at inquest held when great explosions occur, they do not occupy a very high position, but their view are generally swamped by the opinions expressed by the great array of mining engineers, lawyers, &c., who are summoned.

It is difficult to understand what is meant by "any competent workman" being considered eligible for the office of mine inspector. A competent practical workman can scarcely be considered eligible for such an office unless he possesses in addition a considerable amount of scientific knowledge. It has been generally held that it would not be good policy to extend inspection beyond a certain limit, as this would interfere with the responsibility of colliery owners and managers, but this limit has not yet been reached. The appointment of a few practical miners possessed of sufficient scientific knowledge, in addition to their practical experience, would no doubt have a direct tendency to prevent the occurrence of explosions of gas in coal mines.

The strike at the Ushaw Moor Colliery continues, and squabbling is going on between the parties, neither of whom occupy a very dignified position. The owner of the works—Mr. Chaytor—appears to aim at the extinction of the Miners' Union, an undertaking at once wild and Utopian; and, on the other hand, the men having given in their notices ought to have left the premises entirely. They would have no difficulty in getting work at other collieries in Durham, and if their account or their treatment at Ushaw Moor be correct they would be well rid of the place.

The iron trade of the district is in a most critical state, and the men are thoroughly dissatisfied with the present rate of wages; the proceedings at the meetings lately held sufficiently attest this, and when the subject is fairly considered all round the men have some very grave reasons for their discontent. Taking the present market price of iron the men are entitled to an advance of wages at once, but as the advanced rates secured of late have not yet got into the books the average rate for the last stipulated period taken does not really entitle the men to a *à* *avance*, that taking the literal meaning of the rules; it is to be hoped, however, that the men will refrain from such an ill-advised course as striking, otherwise the result will be most disastrous, and the question will no doubt be satisfactorily settled by arbitration. In the present or late position of the trade, when the demand for all kinds of iron and steel was steadily improving, the masters ought certainly to consider the question in a calm



and considerate spirit, and they should also allow the men some advance on these rates at the earliest possible time consistently with the established rules. It is pleasing to note that this dispute, which looked very formidable last week, is now likely to be amicably adjusted. On Monday a meeting of the operatives' representatives of the Board of Arbitration and Conciliation was held at Darlington. Eighteen works were represented, and after some discussion it was decided to advise the men to resume work at once, and to leave the demand for an advance of 7½ per cent. on wages and all other questions in dispute to be decided by the Board of Arbitration, and that the rate of wages agreed to by the board should date from Jan. 30. This result is largely due to the efforts of Mr. Whitwell, President of the Board of Arbitration. Some partial strikes have occurred at Stockton and other places, but the men have now all settled to work on the conditions indicated above.

At Middlesbrough, on Tuesday, the market opened with a steady tone, and 42s. 6d. for No. 3 pig-iron was offered for spring shipment. Makers, however, still refrain from selling largely; they naturally look for better prices. Another order has been received at Middlesbrough for pig-iron for America, and a large shipment will be made shortly, although freights to that country are high. The prices of manufactured iron are steady, but there has not been much fresh business done lately. Consumers are well bought for several months ahead. Engineers and shipbuilders continue very busy, and there is more enquiry for foundry work. Financial matters both on the Continent and at home are being adjusted, and this, together with the favourable Board of Trade Returns and the reduced stocks in Cleveland and the happy termination of the ironworkers' strike in the North of England, are all in favour of an improvement in trade. The coal and coke trades are steady.

There is not much improvement to notice in the chemical trade on these rivers, a better demand has appeared for some kinds of chemicals, and improved rates have been got for those products. The make has been considerably reduced, and this is likely to be carried much further by the stoppage of more works, and the reduction of the make at others, which will tend to bring the trade into a more healthy state. The pumping of salt brine at the works of Bell Brothers on the Tees has been commenced, and this brine can be advantageously converted into chemicals, and no doubt works for that purpose will be opened on the Tees shortly.

#### REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Feb. 9.—There is little to report from this district this week, neither is there much that calls for criticism. Between the Clogau and the Gladir Mines, gold mining in Merionethshire is taking a fresh start, and let us hope that, directed with the intelligence which it is now evident it possesses, it now starts on a permanently successful line. Preparations are being made at the Bwlch Creolan Lead Mine, near Llangynog, for the dressing of a large quantity of ore. The watercourses, inclines, tramroads, reservoirs, and dressing-floors are all in course of formation, and the ore in the mine is said to be 16 in. in width of solid ore. There seems now a good prospect of the railway to Llangynog, passing through Parliament. It is backed by great local influence, and there is now no opposition. There is now immense traffic up the valley in connection with the laying of the pipes for the Liverpool water supply. In Carnarvonshire, Cardigan, Flint, and Denbigh, as well as in Shropshire, the lead mines are working with much the same fluctuation and the usual results. The coal, iron, lime, and brick trades are working well, and work is abundant for men throughout the district.

#### TRADE IN SOUTH WALES.

Feb. 9.—There has been some amount of agitation in South Wales because a gentleman of the name of Riches believes that the coal riches of South Wales are nearly exhausted, and that in 25 years more we shall have arrived at the end of our tether! In 1871 the Royal Commission on Coal, at the head of which, I believe, was Mr. Robert Hunt, of the School of Mines, reported as follows:—

Available Coal in the Chief British Coalfields at Depths not Exceeding 400 Feet and in Seams not Less than One Foot Thick.	
South Wales .....	32,456,208,213
Midland (Yorkshire, Derbyshire, and Nottinghamshire) ..	18,172,071,433
Northumberland and Durham .....	10,038,680,238
Lancashire and Cheshire .....	5,546,000,000
Bristol .....	4,218,970,762
North Staffordshire .....	3,325,488,105
Lesser English Coalfields .....	5,252,740,019
Total of Scotch Coalfields .....	9,843,485,930
Total of Irish Coalfields .....	155,608,000

Grand total .....

90,207,285,398  
In the eleven years since that period there have been many discoveries of coal in different parts of South Wales and Monmouthshire, more especially in 1873-4, when high prices stimulated everybody who owned land to make further discoveries. It is estimated that on the Lord-Lieutenant's estate alone, which runs from Bridgend to Swansea, and contains about 44,000 acres, there are 2,200,000,000 tons, which has hardly been touched at present. The decision in Lady Llanover's case, who has just decided not to appeal to the House of Lords against the decision of the Lords Justices, is a curious commentary on the speech of Mr. Riches. She claimed the right to the minerals under the Abercarn estate. The report says:—

The litigation has been on foot for more than 12 years, and has been exceedingly costly. The decision affects the right to coal and ironstone, and other minerals, in about 7000 acres of land. The question in contest was perhaps the most important in its pecuniary aspect of any case ever tried in England. Taking the workable coal at a thickness of only 45 ft. in all the seams, the area would contain at 1 ton to the cub. yard no less than 506,100,000 tons of coal. The future royalties upon this payable to the landlords will probably average 1s. a ton, or an aggregate prospective value of 25,305,000*l.* Those figures show the enormous riches of the South Wales coalfield.

The amount of steam coal shipped at Cardiff since last report has been 119,803 tons; Newport, 23,998 tons; Swansea, 26,239 tons. Prices for inferior sorts are slightly weaker, but good qualities maintain their position. The patent fuel trade is active; 2117 tons have been shipped from Cardiff, and 5485 tons from Swansea. The price of house coal has been raised from 6d. to 1s. per ton.

The iron and steel industries are still well up for orders, and the works are kept going. The Board of Trade Returns for January show that 111,105 tons of the former were exported in January against 7084 in the corresponding month of last year, and 56,796 tons of steel rails against 23,240. The latter fact shows not only the improvement in trade, but that iron rails are being supplanted by steel. The Nant-y-glo and Blaith Ironworks, where the late Mr. Crawshaw Bailey made his colossal fortune, have applied to Vice-Chancellor Bacon for a reduction of capital, as only the coal on the estate is now being worked. The report says:—

The company was started successfully, but with the exception of an aggregate profit of £6000 made during two years dating from the end of August 1879, to the same period in 1881, had latterly suffered losses to an extent which had led to the ironworks being closed and the iron mines let, so that at the present time the only business being done was at the collieries. There were no debts of the company, and the present petition asked the Court to confirm a special resolution which the company, in exercise of a power to that effect contained in the articles, passed in November and December last, to reduce the capital to the sum of £68,750*l.* in 5000 preference shares of £2*l.* each, and 2500 ordinary shares of £2*l.* each. The Vice-Chancellor made the order as prayed, and sanctioned the company's dispensing with the use of the words "and reduced" in their title.

When we know that the late Mr. Crawshaw Bailey, who came to the district a poor Yorkshire lad, and left 900,000*l.* in personal property alone at his death, we require no further proof of the sustained depression which existed in the district from the collapse of 1874 to within the last few months. The shipments of iron from Cardiff since last report have been 4689 tons, and iron ore has been received to the extent of 8382 tons. The price of the latter may be quoted at about 16s. 6d. per ton.

The copper trade of Swansea has been affected by the financial collapse in France, but the tin-plate trade is becoming more prosperous. Alterations are taking place at many of the works, and as advices from the United States are good, and prices here are at a figure which returns a profit, new life may be said to have been infused into this branch of trade.

The plant and machinery of the East Moor Ironworks were sold on Thursday by Messrs. Gottwaldt and Bowring. There was a very large attendance of buyers, the principal ones being Messrs. Nixon,

Taylor, and Cory; C. D. Phillips, Murphy, and Spittle, Newport; J. Heald and Co.; Seargeant, Swansea; Keard and George, Bristol; Gambel and Co., Hull; Williams and Jenkins, Pontypriid; Vipond and Co., Pontypool; Tyneside Engineering Company, Cardiff; Dyne Steel and Co., and C. Burton, Cardiff.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

Feb. 9.—Mining operations in several parts of Derbyshire are not so good as they have been, the weather being still much against the consumption of soft coal, so that at several collieries the men were again on short time. This during the last three or four years has usually been the case during June and the following two or three months. This year, however, the dull season has commenced much earlier than usual. It has, however, had the effect of putting on one side the wages question, with respect to which the men about two months ago were in a somewhat excited state. The decreased demand has led to a reduction in the price of coal at the pits, so that there is no chance of wages going up higher, but a probability in the opposite direction. The trade with the Metropolis is not so active as it was in the earlier part of the year, but the merchants have kept the prices well up. Silkstones have been making 24s. per ton delivered, and these can be bought at from 8s. 6d. to 9s. per ton, and as the rate is only about 7s. 2d. per ton by railway from most of the pits, there is a large margin left for profit to merchants and dealers. This is the result of the existing state of things by which merchants have the power to fix the prices irrespective of colliery owners. Steam coal has gone off tolerably well of late, the weather having been particularly favourable for shipments. Engine coal has been in fair request for the Lancashire and other manufacturing districts. At the ironworks there has been a steady output of pig, principally made from the Northamptonshire ironstone, and whilst a large proportion is absorbed at the mills and foundries, whilst there has been a steady demand for Sheffield, Staffordshire, and Lancashire. The mills have been running well, merchant iron being in good request, whilst the foundries are busier than they were, especially in pipes, for the laying of which the weather has been more than ordinarily suitable. The steelworks at Dronfield have been working well, there being heavy orders in hand for rails and to an extent that will keep them fully going for months to come.

In Sheffield the works are, perhaps, more active than they have been for years; and, indeed, in some branches the production of manufactured materials is considerably larger than ever it has been. Armour-plates of the composite character are in most active request, and the orders on our own Government sum are heavy, and it is said that during the present year the amount that the Admiralty have to spend on them amount to upwards of 200,000*l.* The Brazilian Government, as well as Italy, France, and China, are also in the market for the plates. Steel is now being largely used for ordinary shipbuilding, and the demand for that purpose is rapidly increasing. Ordinary iron-plates, as well as sheets, wire, and hoops, are also in good request. The Bessemer works are now more than usually busy, especially in rails, on account of both home, American, and other lines. Railway material of every description goes off well, and orders continue to flow in from nearly all quarters. Cutlery goods, including table, pocket, and pen knives, are in brisk request, and America continues to be one of our best customers. Makers of sheep shears are now doing well, and the same may be said with respect to manufacturers of edge tools, files, and saws. At the foundries business is now looking well, and more is being done not only in heavy castings for crushing and other machinery, as well as in gas and water pipes. Some of the engine-works are doing a fair trade, whilst others are only moderately employed.

The miners, or rather their representatives, have taken a powerful step on the wages question, having determined to limit the production of coal, in the expectation that by so doing they will compel the employers to advance their wages. To do this the men will bring themselves within the meshes of the law, and in all probability some of them will be either summoned or dismissed. The association which has brought this new way of attempting to raise wages, unfortunately for the men, have no funds to support those who voluntarily throw themselves out of employment. The trade, too, is declining, and must now be expected to continue to do so; and, therefore, the time has been most inopportune for making such an experiment. Many of the colliers, too, are working short time, so that the prospects of an advance in wages is anything but encouraging to the miners or those who act on their behalf. The latter should do all they can to ensure full work to the men, without attempting to force up wages, which the trade will not admit of.

#### FOREIGN MINING AND METALLURGY.

There is not much news to communicate with respect to the Belgian coal trade, the state of which remains practically unaltered. Household coal is, perhaps, a little more in demand than hitherto, but the difference is scarcely perceptible, and the quantity disposed of is still comparatively unimportant. Moreover, the season is now so far advanced that it is difficult to suppose that cold weather can exert any serious influence upon the demand. Industrial coal is still in good request, and continues to furnish collieries with their best outlet. Coke is also in considerable demand, and the firm rates previously current have experienced scarcely any change. Business has been done at 16s. to 17s. 8d. per ton. It appears that the imports of coal into Belgium last year amounted to 1,015,396 tons, as compared with 917,033 tons in 1880. In last year's imports Prussia figured for 369,045 tons, the Low Countries for 225,250 tons, England for 262,773 tons, and France for 139,973 tons. It is right to remark that a good deal of the coal received from the Low Countries was really German coal, which found an entrance into Belgium from that quarter. The imports of coke into Belgium last year amounted to 23,223 tons, as compared with 19,217 tons in 1880. The imports of English coal into Belgium declined last year to the extent of about 60,000 tons as compared with 1880. The exports of coal from Belgium last year amounted to 4,464,687 tons, as compared with 4,525,085 tons in 1880. In these totals the exports to France figured for 4,212,813 tons and 4,286,813 tons respectively. The exports of coke from Belgium last year were 915,357 tons, as compared with 850,346 tons in 1880. In these totals the exports to France figured for 782,808 tons and 691,976 tons respectively. The decrease in the demand for Belgian coal in France is probably due to some extent to the efforts which the French are making to turn their own coal resources to practical account.

A slight check has been observed in the Belgian iron trade. There is, however, nothing very surprising in this, as the upward movement which has prevailed for some weeks past could not be expected to continue for ever. Refining pig has been well maintained at Charleroi at 2*l.* 16s. per ton. Iron has been well supported for exportation at 5*l.* 12s. per ton. Ordinary plates have remained firm at 8*l.* per ton, with the usual scale of 16s. per ton for boiler plates. The exports of steel bars, sheets, and wire from Belgium last year amounted to 51,829 tons, as compared with 45,885 tons in 1880. Belgium imported 1,169,206 tons of iron minerals last year as compared with 921,612 tons in 1880. The exports of iron mineral from Belgium last year were 366,822 tons, as compared with 310,582 tons in 1880. The exports of iron rails from Belgium last year were 31,275 tons, as compared with 28,169 tons in 1880. The exports of plates from Belgium last year amounted to 34,293 tons, as compared with 32,199 tons in 1880. Upon the whole, the metallurgical production of Belgium appears to have been exported to a larger extent last year than in 1880. The production of pig-iron in the Zollverein amounted in 1881 to 2,800,000 tons in round figures, as compared with 2,779,000 tons in 1880, and 2,227,000 tons in 1879.

There is not much change to report in the French iron trade. Matters remain in much the same state and clients appear to have fully admitted the pretensions of merchants; at any rate, merchants' iron cannot be procured below 8*l.* 8s. per ton. Stocks are much reduced and the demand continues good. The imports of iron minerals into France in the first 11 months of last year amounted to 1,195,600 tons as compared with 1,076,181 tons in the corresponding period of 1880. The exports of iron minerals from France in the first 11

months of last year amounted to 14,652 tons, as compared with 34,106 tons in the corresponding period of 1880; the imports of steel were 14,386 tons and 6229 tons respectively. As in Belgium so in Germany a rather calmer tone has distinguished the iron markets; orders come to hand, but the current is not so rapid nor so well sustained. The ironworks are still, however, overdone with orders and find it difficult to satisfy their clients; it is rather new orders which make default to some little extent. Upon the whole the situation is still favourable. This may be said not only of Westphalia and Silesia, but also of the less important metallurgical districts of Thuringia, Wurtemberg and Bavaria. The production of pig in the Zollverein amounted in December to 280,000 tons against 201,000 tons in the corresponding month of 1880. For the whole of last year the production was 2,800,000 tons as compared with 2,729,000 tons in 1880, and 2,227,000 tons in 1879. The production of iron last year in the Dortmund district was 507,000 tons as compared with 479,000 tons in 1880; the production of steel was 836,000 tons against 664,000 tons.

#### AMERICAN GOLD AND SILVER PRODUCE.

The annual yield of the precious metals and base bullion produced in the States and Territories west of the Missouri River, including British Columbia (and receipts in San Francisco by express from the west coast of Mexico) for 1881, was, according to the usual statement of Messrs. Wells, Fargo, and Co., dated Jan. 2, represented by a gross total of \$84,504,417, the aggregate products being:—Gold, \$31,869,686; silver, \$45,077,829; lead, \$6,361,902; and copper, \$1,195,000. California shows a decrease in gold of \$579,069, an increase in silver of \$323,582. Nevada shows a total falling off of \$3,184,057; the yield from the Comstock being only \$1,726,162, as against \$5,312,592 in 1880—a decrease of \$3,586,430. The product of Eureka District is \$4,127,265, as against \$4,639,025 in 1880—a decrease of \$511,760. Utah shows an increase of \$860,335. Colorado shows an increase of \$1,672,171; and Arizona, \$3,726,295 over the report of last year. The extent to which the several States and Territories contributed to produce this handsome total is shown in an elaborate table, detailing the gold dust and bullion by express and by other conveyances, the silver bullion by express, and the ore and base bullion by freight. Subjoined are the totals ranging the region according to the quantity produced:—

Colorado .....	\$22,957,160	Idaho .....	\$2,834,474
California .....	18,020,679	Mexico (West Coast) ..	2,433,343
Nevada .....	11,847,584	Oregon .....	1,189,615
Arizona .....	8,198,788	British Columbia .....	872,600
Utah .....	7,311,238	New Mexico .....	814,944
Montana .....	4,359,071	Washington .....	109,983
Dakota .....	3,550,950	Alaska .....	13,000

The bullion from the Comstock contained 47.54 per cent. gold, and 52.46 per cent. silver. Of the so-called base bullion from Nevada 44.70 per cent. was gold; and of the whole product of the State 26.53 per cent. was gold. The gross yield for 1881, shown above, segregated, is approximately:—Gold, 37.71 per cent. = \$31,869,686; silver, 53.35 per cent. = \$45,077,829; lead, 7.53 per cent. = \$6,361,902; copper, 1.41 per cent. = \$1,195,000 = \$84,504,417. The exports of silver during the past year to Japan, China, India, the Straits, &c., have been as follows: from Southampton, \$21,000,000. From Marseilles, \$1,000,000; San Francisco, \$5,000,000. Total, \$27,000,000, as against \$34,700,000 from the same places in 1880.

#### WHEEL COATES MINING COMPANY.

In consequence of the erroneous assumption that the arrangement for working Wheel Coates as a Cost-book Company, instead of under the Limited Liability Acts, was of the nature of a simple reconstitution authorised by the Act, an equally erroneous view has been taken of the rights of the shareholders in the limited company now in liquidation. The basis of the error is very accurately explained in the subjoined communication from Messrs. Leary and Co., as solicitors of the committee of Wheel Coates Cost-book Company. They remark: "It is evident the entire article, as well as the letter of your correspondent Mr. Willis, to which you refer, are based upon an entirely erroneous assumption, and we are quite sure you will be anxious to correct your statement as soon as the error of fact is pointed out to you. You seem to think that the present company is a mere continuation, though under a changed constitution of the old Limited Liability Company, and nothing but this fundamental error can explain the erroneous advice given to Mr. Willis, based upon the 161st section of the Joint Stock Companies' Act. That section provides that liquidators may, by the authority of a special resolution, sell the property of the company in liquidation to another company, and accept shares in payment for distribution among the shareholders of the liquidating company, but that any shareholder unwilling to accept such substituted shares may insist on having the value of his shares at the date of the liquidation ascertained by arbitration, and paid to him in cash. But no such state of things exists here. The liquidators of the old company (with which we had no connection) sold the property of that company by public auction or tender. It was purchased and paid for in cash by the highest bidder (who had nothing whatever to do with the old company, and was entirely independent of it) with the view of forming a new company on the Cost-book System, and that company has no relation whatever to the old company, and inherits no part of its constitution or obligations. It is composed of men of high character and standing, who have a firm faith in the property, and every prospect of making it eminently successful."

It need scarcely be said that these being the facts of the case the view taken as to the questionable nature of the change was altogether unjustified, the owner of any property, whether an individual or a Limited company, being obviously entitled to dispose of it as he may please, and as in this case there was a bona fide sale for cash, and no attempt to substitute Cost-book shares for Limited Liability shares, we can only regret that the statement was made that the legal position of the shareholders was being improperly altered.

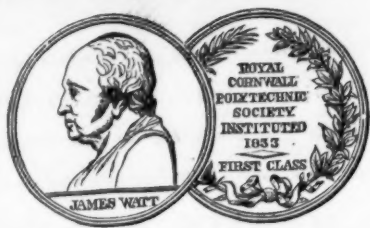
TRESAVAN MINE.—At the monthly pay on Friday last the purser, agents, and a few friends dined together and discussed the position and prospects of the mine. It was remarked that the conditions of mining are now so altered by the introduction of boring machinery and strong explosives, and results can be so much more speedily obtained that Limited Liability companies, under good management, have a far better chance of success than they ever had before in the history of Cornish mining. At Tresavan they are preparing to take advantage of the most scientific and economic appliances, and it is surprising the amount of work that has been accomplished on the mine since a start was made. The utmost energy must have been put forward with a determination to get returns as soon as possible. To give some idea of the work that has been accomplished during the last six or seven months we may state that the adit level has been cleared for over a mile in length; Harvey's shaft and Williams' shaft have been cleared and divided ready for work, the 90-in. engine is almost completed, and will go to work in about six weeks' time, the old stamps engine is erected and complete, and 48 heads of stamps are being put up, and will be complete in about a month. They have got Pendarves United double 24-in. engine coming, and it is said there is not a better engine in the county for a steam whim. There is a steam-engine fixed to bring up the stuff from Caddy's lode, on the western part of the set, which was to commence this week. The steam capstan is on the mine, and in course of erection. A tramroad of about half-a-mile in length has been laid down to convey the tinstuff from Wheel Boys shaft or Caddy's lode. The stamps being on the top of the incline an arrangement has been made by which the wagons going down the incline will pull others up, which will effect a great saving on transit. There is a Blake's stone-breaker on the mine, and it will be driven by steam from the boilers working one of the engines. The stuff from the stone-breaker will fall into a pass from which the tram-wagons will take it to the stamps. There are large smiths' and carpenters shops erected, and some of the pit-work is expected to be on the mine this week, and the rest to follow, and it is expected they will be able to go to work in about six weeks' time.



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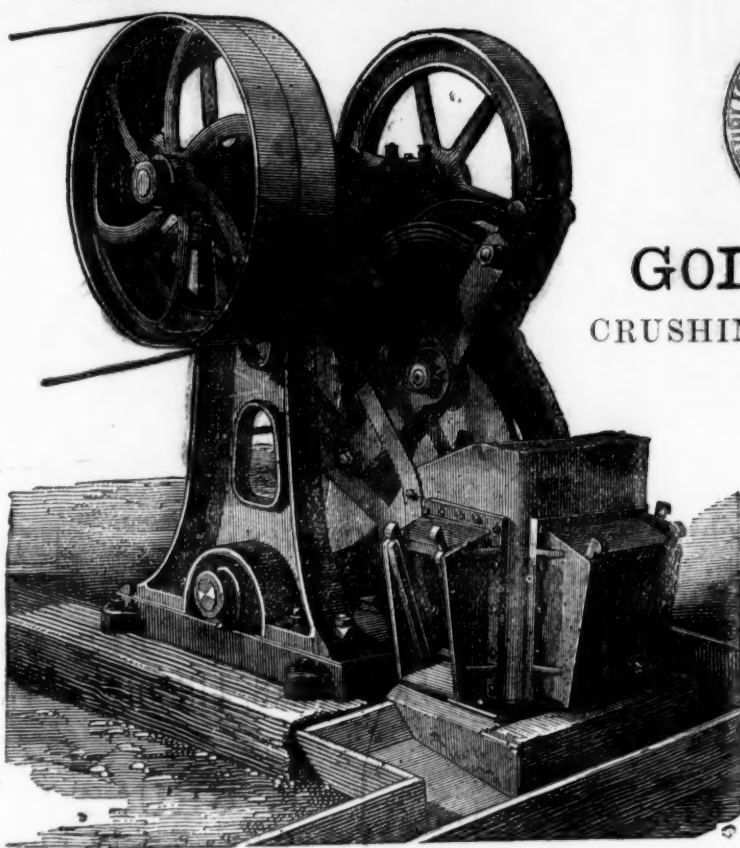
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OF ANY SIZE OR PATTERN

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Amalgamated Copper Plates

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IN USE IN CORNWALL, CALIFORNIA, BRAZIL, AUSTRALIA, AFRICA, AND INDIA. THE BEST MACHINE FOR PULVERISING

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And other hard and refractory Materials. Particularly designed and adapted for transmission Abroad, and for Counties where Transport is a difficulty. Quickly and economically erected. Can be seen stamping Quartz near London.

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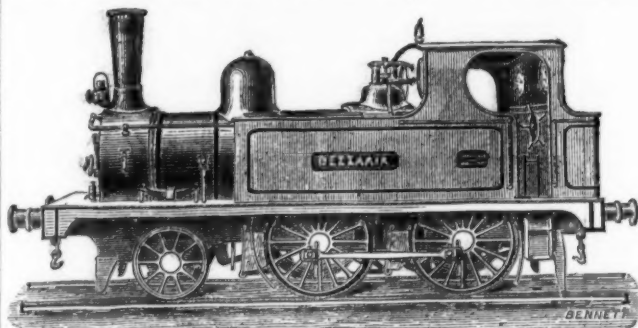
**MARKE VALLEY.**—A detailed report upon this mine has been made by Capt. Thomas Hodge, of Wheal Grenville, who states that in Wheal Jenkin part quite enough has been seen of the vein east of the shaft to justify them in erecting suitable machinery to prove the lode deeper in a miner-like way. The machinery throughout the mine is in fair working order. At Salisbury shaft, in Marke Valley proper, the 160 east might be driven another 10 fathoms, and if the lode should not improve, as they are led to expect, it might be abandoned, and the water let in to the 124, and start the 112 cross-cut north; this will have another 50 fms. to reach the boundary, in which there are two Rose Down lodes. The mine cannot pay expenses at present, but he feels confident that the western ground will yet pay handsome profits when fairly opened up.

**CITY OF LONDON DAY CENSUS.**—The now almost invariable practice of men of business engaged in London, Liverpool, Manchester and other large cities, to reside in the suburbs or anywhere within easy reach by railway from their offices, works, or warehouses, has caused these cities to figure in the Imperial census much below their real importance, and the City of London has, therefore, taken steps to remove any misconception that may have arisen. The application of the Corporation to the Registrar-General, and to the Chairman of the Local Government Board, during the Session of 1880, to include in the Census Bill powers to take a subsidiary day census of the City of London, was not acceded to for reasons which affected the passing of the Census Bill, although those gentlemen fully concurred in the desirability of such a census being taken; therefore, the Corporation themselves gave instructions for this important work to be carried out, and the enumeration was effected on April 25 last. The results are in every way striking, and furnish a full and instructive refutation to assertions which are frequently and recklessly made with the view of degrading the City of London as regards its relative position as one of the districts of the Metropolis. It appears that the City stands second of the 39 parishes and districts represented on the Metropolitan Board of Works as regards population; Islington coming first with 282,628, the City of London and Liberties next with 261,061, Lambeth 253,569, St. Pancras 236,209, and so on. A list is given of 26 houses containing 1320 separate tenements occupied by 6502 persons, yet these would probably appear in imperial census as 12 houses with 12 inhabitants, as many of the houses would be left at night entirely in the charge of the police, and therefore come into the Imperial Census returns as uninhabited houses. The aggregate population of London appears to be something over 3,800,000. The Report of the City Day Census, 1881, has just been issued by the Corporation through Messrs. Longmans, and is in every respect worthy of thorough and careful study.

**MINERAL RESOURCES OF NEW SOUTH WALES.**—Notwithstanding the gigantic proportions the pastoral industry of New South Wales has attained in comparison with all others, there are increasing indications (writes the Sydney Mail) that the colony is yet destined to become a great mining country. At the close of 1880 the aggregate value of all minerals raised in the colony as far back as records are kept was 52,714,317*l.*, to which the chief contributors were gold, coal, tin, and copper, in the order named. The quantity raised in different years varied greatly; but in 1880 the gold was valued at 441,549*l.*, the coal at 625,336*l.*, the tin at 471,337*l.*, the copper at 364,059*l.*, and all other minerals at 85,598*l.* The last-named industries are nearly all in their infancy, and they include such valuable articles of commerce as kerosene, shale, silver, iron, lead, antimony, bismuth, asbestos, manganese, zinc, slate, and limestones. By the side of a wool clip valued in 1880 at 8,000,000*l.* sterling, and in 1881 at not less than 10,000,000*l.* a couple of millions from mines look small. But the flocks and herds of the colony and the freeholds and leasehold station property represent possibly 70,000,000*l.* sterling of capital, which ought to yield large profits for a precarious industry. Some kinds of mining are even more precarious than wool-growing, but where there is the greatest risk there is usually the greatest prize to be won. Many of the mineral treasures recently brought to light in New South Wales are above the rank of speculations. To intelligent men they are of the character of certainties, and will amply repay almost from the first a judicious expenditure of time and means.

ESTABLISHED 1860.

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AT THE ROYAL CORNWALL POLYTECHNIC SOCIETY,

FALMOUTH, SEPT., 1881.

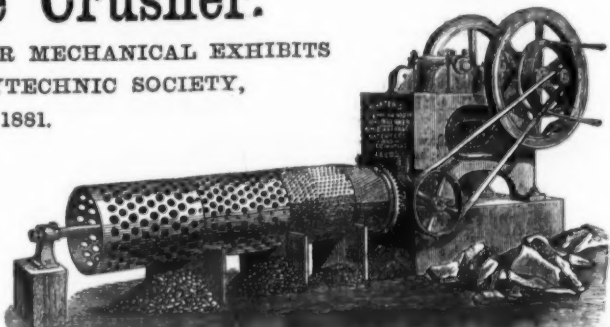
READ THIS—

The Bold Venture Lime and Stone Co., Peak Forest,  
Messrs. W. H. Baxter and Co., June 8, 1881.

GENTLEMEN,—We have the pleasure to inform you that the 20 by 9 Stone Breaker supplied by you is now working to our entire satisfaction, and we are now able to fulfil our contract with ease, which we had much difficulty in doing before with the Blake Machine. It takes less power and turns out considerably more stone.

Yours truly,

BOLD VENTURE LIME AND STONE COMPANY.



GUARANTEED NO INFRINGEMENT OF ANY OTHER PATENT

These Machines turn out the same amount of work with less than half the power, and make a better sample of Road Metal, with 50 per cent. less waste, than any other machinery, and for Crushing Purposes they are still more advantageous, as the sudden action entirely dispenses with the clogging when used for crushing softer materials, and thereby saves many breakages and a great waste of power. There is also a saving of fully 75 per cent. of lubrication required over the Blake Machine, and as a proof of this, our driving shaft never becomes heated. We are also prepared to guarantee our driving shaft from breakage in any of our Knapping Motion Stone Breakers.

We have already supplied our Machines to Derby, Harrogate, and Falmouth Local Authorities; besides several Quarry Owners, Contractors, Plaster Manufacturers, &c.

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 SAFE  
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 EASY TRANSPORT IN MOUNTAINOUS COUNTRIES  
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 APPLICABLE TO ALL KINDS OF BOILERS & FURNACES  
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**New Patent Brick-making Machine,**

Embraces the following advantages—viz.:

Implicitly, strength, and durability. Compactness and excellence of mechanical arrangements, large producing capabilities, moderate cost.

It makes two bricks at once, and will make 2,000 to 14,000 plastic pressed bricks per day, hard enough to go direct to the kiln without drying; or it will make the bricks thoroughly plastic if required. For works requiring a machine at less cost the machine is made to turn out one brick at once, and is capable of producing 8000 bricks per day.

The Machine can be seen at work daily at the Brickworks of the Patentees, JOSEPH FIRTH AND SONS, WEBSTER HILL, DEWSBURY, and CROWBURY BRICK WORKS, SUSSEX; as also their Patent Gas Kiln for Burning Bricks, which possesses the following amongst other advantages, viz.:—Economy in Fuel, Rapidity and Quality of Work, even Distribution of Heat, and Total Consumption of Smoke.

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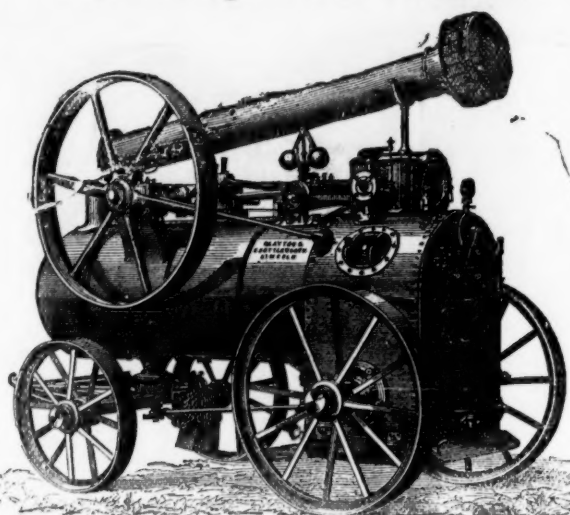
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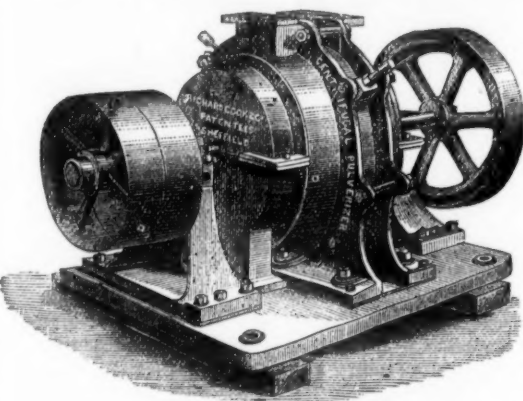


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**Patent Centrifugal Pulveriser,**

(Two tons per hour with 5 horse-power actual.)



THE ONLY GUARANTEED MACHINE FOR

**GOLD QUARTZ.**

This mill consists of a circular iron casing, the section being elliptical in form, and is fixed vertically on a firm bed or foundation plate, a shaft runs through the centre of the casing on which is keyed a series of arms, in the extremities of which revolve two more slightly oblong iron rollers, which, when put in motion, fly off from the centre and run upon the interior periphery of casing, and by centrifugal force crush and pulverise the article under treatment.

The effect produced by this system is most extraordinary in its practical results, the power required is small in consequence of the comparative absence of friction from the working parts of the mill, the combined results of the rolling action of the crushers and their impact by centrifugal force on the material, being the same in kind, but in degree far exceeding that of edge runners, the sides of the casing are formed as open wire sieves of the degree of fineness required, and a series of propelling blades attached to and revolving with the central shaft drive the material under treatment through the sieves as it is pulverised; by this arrangement the degree of fineness can with certainty be arrived at from coarse to extreme fine, and that with uniformity.

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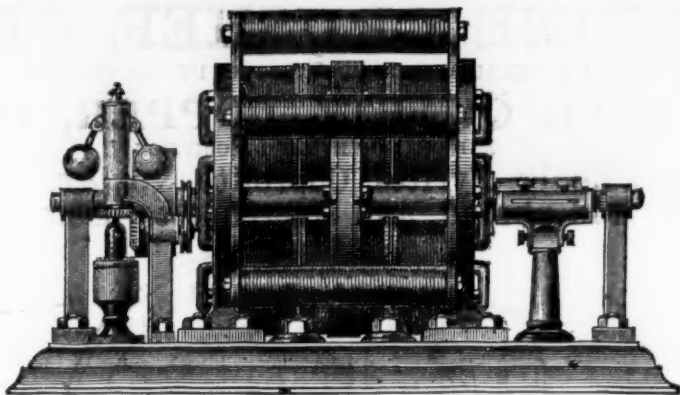
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FOR DEPOSITING

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REPEATED COMPARATIVE TRIALS have proved that this is the MOST POWERFUL MACHINE IN THE MARKET, that it NEVER REVERSES CURRENT, and that it is very easily worked without special knowledge.

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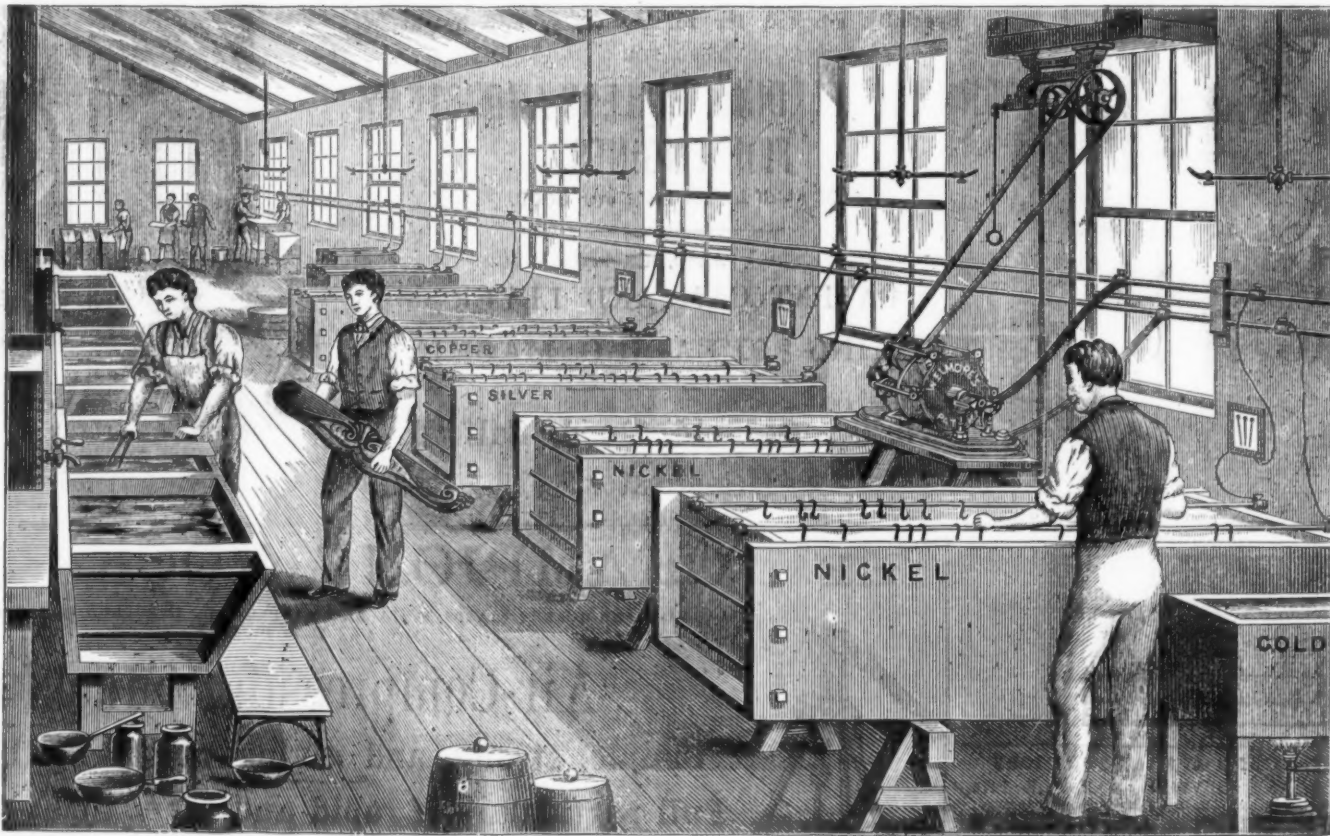
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The attention of TIN-PLATE MANUFACTURERS AND GALVANIZERS is respectfully directed to the NEW PROCESSES of manufacturing Tin-Plates by depositing the Metal by the current of an "ELMORE'S PATENT" DYNAMO-ELECTRIC MACHINE through aqueous solutions in contradistinction to the old processes of dipping in molten metal.

THE ELECTRO DEPOSITED METAL IS PERFECTLY REGULAR IN character, and the electric current may be so EASILY CONTROLLED as to coat with a MERE FILM OF METAL, OR A DEPOSIT OF ANY DESIRED THICKNESS. The great economy in the cost of plant and cost of production will be immediately self-evident. As nearly the whole of the existing plant can be used in the new process, the cost of altering the system will be comparatively trifling.

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SPECIALLY CONSTRUCTED FOR DEPOSITING ANY METAL IN ANY QUANTITY.



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"Having had considerable experience in dynamo-electric machines, Mr. W. Elmore has been careful to note the defects and irregularities which some of the less skilfully constructed machines have presented, and thus he has been enabled to produce a really practical and effective machine, of great power, which may be thoroughly depended upon as being capable of giving the most satisfactory results for all purposes of electro-deposition, including gilding, silvering, bracing, nickeling, and electrotyping.

"The advantages of dynamo-electricity in the important art of electrotyping are beyond estimation. When it is known that a fine, clear, deposit (or 'shell') of copper, 800 ft. square feet, can be obtained by a dynamo-machine in less than three hours, without 'pin-holes,' and other defects common to battery deposits, it will be at once seen that the ordinary battery is effectually and unmistakably superseded.

"One of the most useful purposes to which dynamo-electricity can be applied is the production of chemically pure nickel solutions, and salts of nickel, for the electro-deposition of the metal. The vast amount of elec-

tricity generated in a dynamo-machine enables one to dissolve nickel and other metals in their own solvents, far more economically, and in greater purity than by the ordinary method of treating metals. Electrical power obtained by the ordinary galvanic battery would be far too expensive for this purpose. The solutions formed by the aid of dynamo-electricity are not only purely and economically made; but they can be produced in far less time, and with comparatively little trouble and attention. To Mr. Elmore is due the honour of having introduced into this country the process of making pure nickel solutions and salts by means of dynamo-electricity. The boon he has thus conferred upon a large industrial class we need not dilate upon."

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**GOLD AND SILVER QUARTZ, COPPER, TIN, ZINC, LEAD,**  
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Also Cement, Barytes, Limestone, Chalk, Pyrites, Coprolite, &c., &c. Several are already in successful operation in this country and abroad, and reference to users can be had on application.

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JAWS, IN FOUR SECTIONS,  
WITH PATENT FACED BACKS, REQUIRING  
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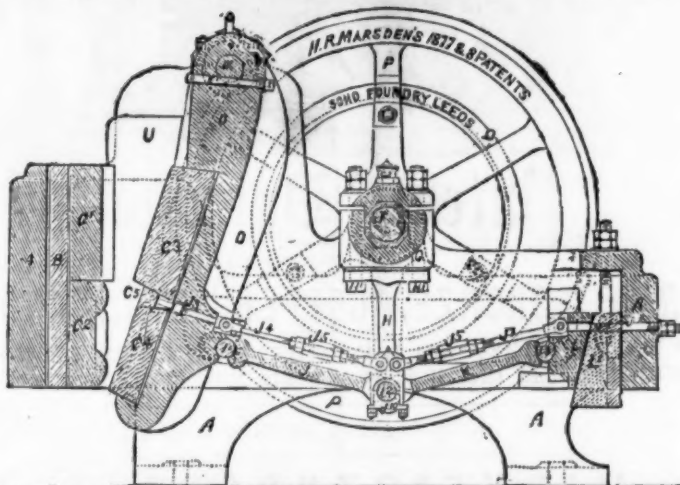
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RODS.  
NEW PATENT WROUGHT-IRON CONNECTING RODS.  
NEW PATENT RENEWABLE TOGGLE CUSHIONS &c.

**OVER 4000 IN USE.**

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"I have great pleasure in bearing testimony to the merits and capabilities of your patent combined fine crusher and sieving apparatus. I have tried it on a variety of ores and minerals, and it pulverizes them with equal success. You can put in a small paving stone, and bring it out like flour."  
"The power required to drive it is very small, being from 4 to 6-horse, and the repairs are almost nil."



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FIRST-CLASS GOLD AND SILVER MEDALS.

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PARTS OF THE WORLD.

ROAD METAL BROKEN EQUAL TO HAND, AT  
ONE-TENTH THE COST.

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"The 15 x 8 stonebreaker gives perfect satisfaction. It produces a more cubical stone than any others I have seen at work."  
"Your 15 x 10 machine makes the best road metal I have ever seen put through a machine—in fact, comparing favourably with hand-broken."

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"Some of your testimonials do not give your machines half their due. I have seen men hammering away on a big rock for a quarter of a day which your machine would reduce to the required size in a quarter of a minute. I would guarantee that your largest size machine would reduce more of the Cornish tin capels (which is the hardest rock of England) in a day than 200 men, and at 1-25th the cost."

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SPECIALITIES ARE HIS

### STEAM PUMPS

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**COLLIERY PURPOSES,**

Specially adapted for forcing Water any height;

ALSO, FOR

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FIRE ENGINES,**

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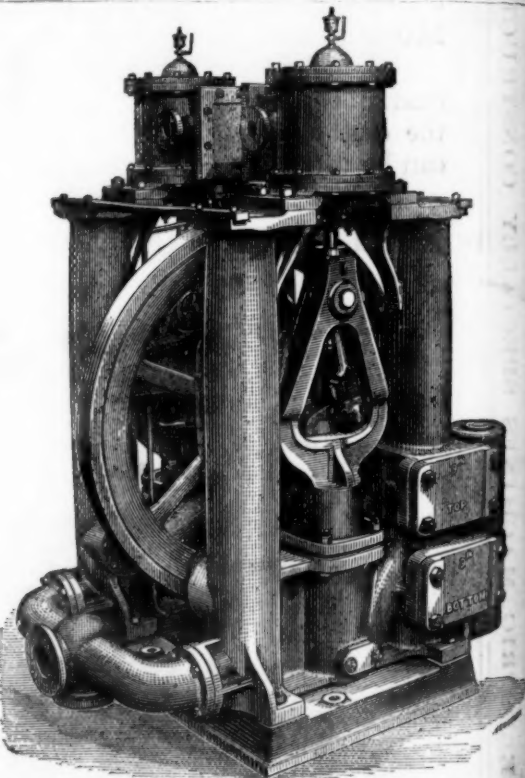
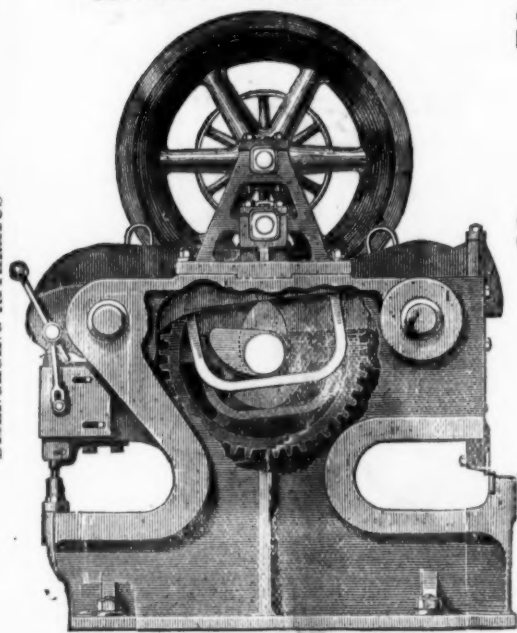
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